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Bow Corridor

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Local Integrated Resource Plan



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PREFACE

This planning document was prepared by government agencies and public consultants in recognition of the need for improved management of Alberta's lands and resources. It applies only to public lands within the Bow Corridor planning area, not to private or federal lands.

The plan presents the Government of Alberta's resource management policy for public lands and resources within the area. It is intended to be a guide for resource managers, industry and the public with responsibility or interests in the area, rather than a regulatory mechanism. Resource potentials and opportunities for development are identified with a view to assisting in the economic progress of Alberta. The plan is sufficiently flexible so that all future proposals for land use and development may be considered. No legitimate proposals will be categorically rejected. Energy resource decisions are subject to the application of legal and approved regulatory processes under the jurisdiction of the Minister of Energy. This plan may influence regulatory decisions, but will not result in the categorical approval or rejection of energy proposals. The provincial government is committed to serving Albertans; should a proposal not be in keeping with the provisions of the plan, staff will work with the proponent to explore alternative means for accommodating the proposal in a more appropriate location, either in this planning area or on other public lands. The rejection of any proposal will be done only in writing by the minister or his designate.

A detailed outline for implementation will be provided for this local plan in order to identify the necessary implementation actions and roles. This implementation outline will also provide for the continuing review of the plan so that it may accommodate changing needs and situations. Wherever possible, the private sector will be provided the opportunity to be actively involved in the operational delivery of the plan.

Implementation is subject to the normal budgetary approval process. In establishing overall priorities, opportunities in other planning areas and areas currently outside the planning process will be considered.

While the plan identifies resource potentials and opportunities, the realization of these may require the dedication of major amounts of public funds. The plan will be used on the understanding that any actions required for implementation will only be undertaken as budgetary approvals are given in the normal way. The private sector will be given the first opportunity to provide any development required.

This plan has no legal status and is subject to revisions or review at the discretion of the Minister of Forestry, Lands and Wildlife.

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1.0 INTRODUCTION

1.1 The Planning Area

1.1.1 Location

The Bow Corridor planning area (Figure 1) is located approximately 65 km west of Calgary, paralleling the Trans-Canada Highway from the mouth of the Kananaskis River to the Banff National Park gates. It is bordered on the west by Banff National Park, on the north by the Ghost River Sub-Regional Integrated Resource Plan, on the south by Kananaskis Country and on the east by Stoney Indian Reserves 142, 143 and 144. It encompasses about 475 km² (183 sq. mi.) of land, of which 88 percent is public land. The majority of patent (private land) occurs south of the Trans-Canada Highway, extending from Pigeon Mountain to the town of Canmore. The corridor itself falls within the Municipal District of Bighorn No. 8 (hereafter referred to as the MD of Bighorn) and contains the town of Canmore and the hamlets of Exshaw, Harvie Heights and Lac des Arcs, and the commercial subdivision of Dead Man's Flats. There is a small parcel of land south of the Spray Lakes road in section 31-24-10-W5M that is within Improvement District No. 5.

1.1.2 Resource Uses

The Bow River Valley in this area forms a major national transportation corridor. It contains the Trans-Canada Highway which is the major road link between Alberta and British Columbia. Highway 1A is a scenic highway, which is used to a large extent for local and industrial traffic. The Canadian Pacific Railway transcontinental main line also passes through the corridor.

The corridor is an important mineral extraction and processing area. The major operations include LaFarge Canada, Baymag and Continental Lime, with a large number of smaller mineral-related industries. Limestone, shale and siltstone quarries, along with sand and gravel extraction, contribute in an important way to the economy of the Bow Corridor.

The entire planning area is used for a variety of extensive outdoor recreation activities by local residents, and nonresidents mainly from the Calgary area. Because of its location at the borders of Kananaskis Country and Banff National Park, the valley plays a role as a major service centre to these important recreation/tourism areas.

There are a number of grazing permits in the planning area. There is no commercial timber harvesting and no petroleum and natural gas activity. Historically, coal mining was important to the local economy, but there is currently no activity.

1.1.3 Physiography

The Bow Corridor planning area occurs within two physiographic subregions, the Front Ranges of the Rocky Mountains and the Rosebud Plain of the Western Alberta Plains.

The Front Ranges of the Rocky Mountains vary in elevation from 1300 m near Exshaw to over 2590 m atop the Three Sisters. They are comprised mainly of Upper Palaeozoic, Lower Cretaceous, Jurassic and Triassic dark grey to black siltstones and Lower Palaeozoic grey sandstones. Surface materials consist mainly of undifferentiated colluvial materials overlying bedrock and fluvial fans along the base of the slopes. Morainal materials are found along the benchlands to the south of the Bow River, while the benchlands north of the river consist of glaciofluvial sands and gravel. Bedrock is exposed along Grotto, Door Jamb and Pigeon Mountains and on Wind Ridge and the Three Sisters.

The Rosebud Plain of the Western Alberta Plains occurs in the extreme eastern portion of the corridor and includes those lands east of Door Jamb Mountain. It ranges in elevation from 1280 m at Kananaskis Falls to nearly 1350 m at the base of Door Jamb Mountain. It is underlain by Upper Cretaceous sandstones of the Brazeau Formation and dark grey shales of the Alberta Group. Surficial materials consist of pitted and terraced glaciofluvial gravels. Minerals and organic wetlands occur in meltwater channels and dried kettle lakes.

The Bow River cuts through the middle of the corridor. Within the Rosebud Plain, its valley is confined by the bedrock, while within the Front Range, it appears as a misfit stream, occupying only a very small portion of its large floodplain.

1.1.4 Ecoregions

The vegetation of the Bow Corridor is particularly diverse, being representative of the Montane, Subalpine and Alpine ecoregions. The Rosebud Plain and the lower slopes and valley bottom of the Front Range exhibit vegetation characteristics of the Montane Ecoregion, while the treed upper slopes are representative of the Subalpine Ecoregion. The Alpine Ecoregion is found atop Wind Ridge, Three Sisters, Pigeon, Exshaw, Grotto and Door Jamb mountains.

The Montane is distinguished from other ecoregions by the occurrence of Douglas fir, with white (x Englemann) spruce and lodgepole pine being important arboreal components. Grassland/shrubland communities are commonly found in association with Douglas fir north of the Bow River, while lodgepole pine and white spruce communities with grassy understories occur south of the river where cooler, more northerly aspects dominate. Stunted aspen communities occur extensively in the Rosebud Plain. For the most part, these communities have developed on well drained Eutric Brunisols.

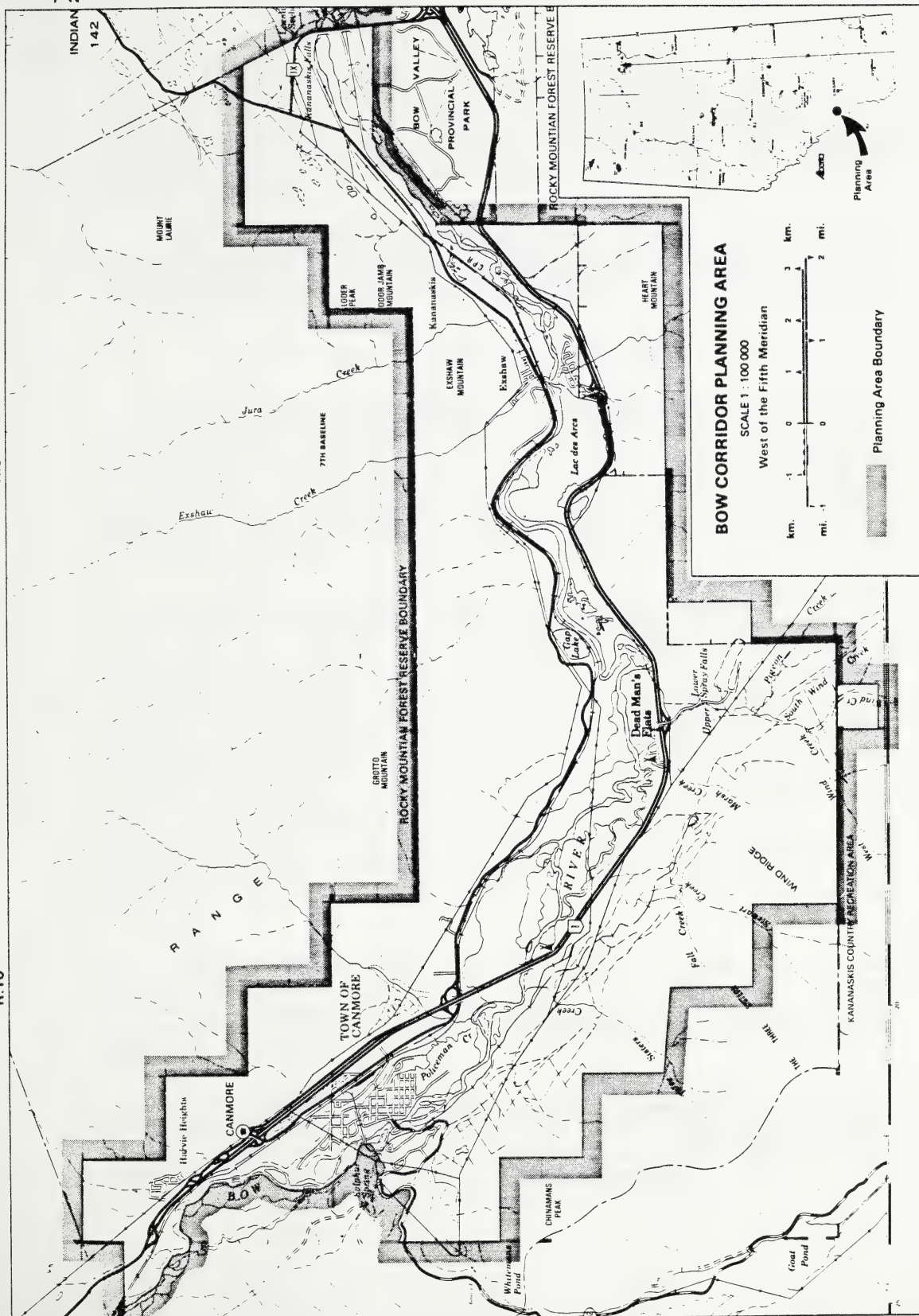


Figure 1 : Bow Corridor Planning Area

In elevation, the Subalpine Ecoregion occurs above the Montane and is characterized by either lodgepole pine or white (x Englemann) spruce. Aspen is often a component of the coniferous communities on steep, south-facing slopes where insolation is high. Grasslands, such as those found along Wind Ridge, are representative of areas receiving high solar radiation inputs. Understorey vegetation is poorly developed.

The Alpine Ecoregion occurs above the tree line and is of limited extent within the study area. These areas have highly variable vegetation communities. Low growing shrub communities and fescue grasslands with scattered krumholz fir and spruce are most common.

1.2 Policy and Planning Context

A Policy for Resource Management of the Eastern Slopes (Eastern Slopes Policy), approved by provincial cabinet in July 1977 and revised in 1984, identifies integrated resource planning under a comprehensive interagency approach as the means for effective management of the resources of the Eastern Slopes region of Alberta. Preparation of integrated resource plans (IRPs) by provincial government agencies with responsibility for management of public lands and resources is one form of implementation of the Eastern Slopes Policy.

A land use plan for public land and resources was completed for the Bow Corridor area in 1979, titled the Canmore Corridor Integrated Land Management Plan. That plan provided land use zoning and operation direction for the management of public land and resources. It zoned the land for intensive development, mineral extraction and production, recreation facility, recreation, extensive use and floodplain (restricted use). The Canmore Corridor plan has been used since 1979, but a number of concerns have been recognized with its application. The plan did not revise Eastern Slopes zoning in the corridor. As well, a number of provisions in the plan are no longer applicable. For example, at the time of plan preparation the Bow Corridor was in Kananaskis Country but was subsequently removed, which means that some of the policy direction in the plan no longer applies. There is a growing interest in the planning area as both a tourism destination area and as a growing service centre to adjacent recreation and tourism areas.

The Bow Corridor planning area was identified as a high priority by the Resource Management Division Heads Committee in August 1987. The Bow Corridor Local Integrated Resource Plan reflects the current demands and uses by industry and the public, and priorities of the provincial resource management agencies.

The Bow Corridor planning team consists of representatives from the Public Lands Division, Fish and Wildlife Division and Alberta Forest Service from the Department of Forestry, Lands and Wildlife, as well as from Alberta Energy, Alberta Tourism and Alberta Culture and Multiculturalism.

Consultative team members were identified and given the opportunity to present agency concerns and opinions at key stages of the planning process. The following agencies participated in the planning project: Alberta Agriculture, Energy Resources Conservation Board, Alberta Environment, Forest Industry Development Division, Alberta Transportation and Utilities, Recreation and Parks (Kananaskis Country), MD of Bighorn, Calgary Regional Planning Commission, Canadian Parks Service and the town of Canmore.

A public involvement program was conducted during plan development to provide the public with information and opportunities to comment on planning documents. Specific objectives of public involvement are as follows:

1. To use the knowledge of residents in evaluating and improving the resource data base.
2. To obtain public opinion on issues that should be addressed and resource management direction that should be included in the plan.
3. To build public support for the plan.
4. To inform the public about the potential impact of resource management decisions.
5. To inform government officials and politicians about public opinion regarding the plan.

A Policy for Resource Management of the Eastern Slopes Revised 1984 provides guidelines and objectives for integrated resource management and planning for the entire Eastern Slopes region including the Bow Corridor planning area. The Eastern Slopes Policy relies on regional land use zoning to designate large areas of land for varying degrees of protection, resource management and development.

The overriding principle for all the zones is to protect the valuable watershed resources of the Eastern Slopes, and to provide for public land and resource use in a manner consistent with principles of conservation and environmental protection. The zoning does not apply to privately owned lands in the planning area.

The Bow Corridor Local Integrated Resource Plan supersedes the zoning configuration in the Eastern Slopes Policy. As a result, the zones have been refined and the regional zoning found in the Eastern Slopes Policy no longer applies in the planning area. Table 1 lists the intent of each of the land use zones within the planning area. Table 2 defines a range of compatible activities appropriate to the intents of the land use zones for the planning area.

For a discussion of legislation and policy direction relating to this plan, refer to Appendix A.

Table 1

INTENTS OF THE EASTERN SLOPES POLICY ZONES

<u>#</u>	<u>ZONE</u>	<u>INTENT OF THE ZONE</u>
1	Prime Protection	To preserve environmentally sensitive terrain and valuable ecological and aesthetic resources.
2	Critical Wildlife	To protect ranges or terrestrial and aquatic habitat that are crucial to the maintenance of specific fish and wildlife populations.
3	Special Use	To recognize historical resources, lands set aside for scientific research and any lands which are required to meet unique management requirements or legislative status, which can not be accommodated within any of the other zones.
3A	Buffer	To recognize the lands directly adjacent to the Trans-Canada Highway in providing visual screening from development and to provide a protective buffer adjacent to the Banff National Park Gate.
4	General Recreation	To provide for a wide range of outdoor recreational and tourism opportunities.
5	Multiple Use	To provide for the management and development of the full range of available resources, while meeting the objectives for watershed management and environmental protection in the long term.
5A	Mineral Expansion	To recognize the need for future mineral exploration and development.
7	Industrial	To recognize existing or approved industrial operations such as coal mines, gas processing plants, cement plants and large forest-product mills.
8	Facility	To recognize existing or potential tourism, recreation and commercial development areas.

TABLE 2. COMPATIBLE ACTIVITIES BY LAND USE ZONE ¹

ACTIVITY	ZONE								
	1 PRIME PROTECTION	2 CRITICAL WILDLIFE	3 SPECIAL USE	3A BUFFER	4 GENERAL RECREATION	5 MULTIPLE USE	5A MINERAL EXPANSION	7 INDUSTRIAL	8 FACILITY
Non-motorized recreation	■	■	□	■	■	■	□	□	■
Fishing	■	■	□	■	■	■	□	□	■
Hunting	■	■	□	■	□	■	□	□	×
Scientific study	■	□	□	■	□	■	□	■	■
Trapping	■	□	□	■	□	■	□	×	×
Trails; non-motorized	□	□	□	■	■	■	□	□	■
Transportation and utility corridors	□	□	□	■	□	■	□	■	■
Primitive camping	□	□	□	×	■	■	□	×	□
Intensive recreation	□	×	×	×	■	■	×	×	■
Off-highway vehicle activity	×	□	×	×	□	■	×	■	■
Logging	×	□	□	□	□	■	□	■	□
Domestic grazing	×	□	□	×	□	■	×	×	□
Petroleum and natural gas exploration and development	×	□	□	×	□	■	×	■	×
Coal exploration	×	×	×	×	×	×	×	×	×
Coal development	×	×	×	×	×	×	×	×	×
Mineral exploration and development	×	□	×	×	×	■	□	■	×
Serviced camping	×	□	×	×	■	■	×	×	■
Commercial development	×	×	×	×	□	□	□	□	■
Industrial development	×	×	×	×	×	■	×	■	×
Recreational Housing	×	×	×	×	□	□	×	×	■

- Compatible Use -Uses that are considered to be compatible with the intent of a land use zone under normal guidelines and land use regulations.
 □ Permitted Use -Uses that may be compatible with the intent of a land use zone under certain circumstances and under special conditions and controls where necessary.
 × Not-Permitted Use -Uses that are not considered to be compatible with the intent or capabilities of a land use zone.

¹ Adapted from "A Policy for Resource Management for the Eastern Slopes-Revised 1984"

1.3 Purpose and Scope of the Plan

The purpose of the Bow Corridor Local Integrated Resource Plan is to provide direction for the management and use of public resources in the planning area in order to maximize benefits for Albertans. A resource is defined as anything that society perceives as having value, including items that have traditionally been considered as resources such as land, wildlife, timber and minerals, as well as less tangible resources without an obvious market value such as unique ecosystems and recreational opportunities. Generally, the plan maximizes benefits by specifying where, when and how resources and resource uses will be managed.

The plan provides a framework for developing and assessing future actions by provincial government agencies and the private sector. It provides government with direction and supporting information for the following: (a) development and implementation of program; (b) review and granting of dispositions, and approvals for private sector development and use of public resources; and (c) allocation of manpower and funds to programs and projects within existing budgets.

The plan provides the private sector with: (a) a clear statement of government intentions for resource management in the planning area; and (b) opportunities for resource development that are compatible with government policy and conditions under which such development could occur.

Direction in the plan is provided by:

1. Clarifying and explicitly stating resource management objectives.
2. Developing guidelines for achieving stated resource management objectives.
3. Refining the Eastern Slopes Policy zoning boundaries in the planning area.
4. Resolving identified resource management issues.

1.4 Public/Private Land Planning

This plan applies only to land and resources owned by the Government of Alberta within the Bow Corridor and will be managed under the various policies contained in this document.

This plan does not apply to privately owned land or land owned by other levels of government. Regarding private lands, the integrated resource plan considers municipal land use plans and bylaws. Private land, and private development on public land, remain under the planning control of local municipalities and the Calgary Regional Planning Commission. The Planning Act

(see Appendix A.9) provides for the planning and regulation of most private development, whether on private or public land. The Crown is not bound by the Act. Therefore the development, use and management of public land and resources by the Government of Alberta is solely under the jurisdiction of the Government of Alberta, and is not controlled by any municipality, local authority or planning commission. The Government of Alberta will continue to make every effort to strengthen the existing coordination and cooperation with local planning authorities.

2.0 RESOURCE MANAGEMENT OBJECTIVES AND GUIDELINES

This section consists of a resource summary and a set of objectives and guidelines for each individual resource sector. A resource management objective is a description of a desirable condition or state for a resource or resource use that can be achieved through management action. These objectives were developed at the plan policy stage of the planning process and provide future standards that participating agencies will strive to attain. They reflect government priorities for the Bow Corridor within the context of the Eastern Slopes Region.

The primary intent for resource management in the Bow Corridor planning area is the following:

To allow for the potential development and use of a range of available resources in particular those of tourism/recreation and the minerals industry while minimizing adverse environmental impacts on watershed and renewable resources.

2.1 Access and Infrastructure

The main transportation route is the Trans-Canada Highway which is an access-controlled highway to which access is allowed only at interchanges. The other major roads are Highway 1A, Highway 1X and Secondary Road 742, which leads into the Spray Lakes area of Kananaskis Country. The majority of the planning area is mainly accessible only by foot or horseback, due to the steep topography and the limited number of access roads and trails.

The Canadian Pacific Railway (CPR) main line runs parallel to Highway 1A through the corridor. It contains a single track with a right-of-way varying between 30 m and 60 m.

There are two high-voltage power lines in the corridor. One is the TransAlta Utilities line running from Canmore over Skogan Pass. The other is a smaller line roughly paralleling Highway 1A. A high pressure gas transmission line is located in the CPR right-of-way.

Objectives

1. To minimize aesthetic and visual impact of access and infrastructure development.
2. To maintain major transportation and utility corridors in the planning area.

3. To meet access and infrastructure requirements of resource users where appropriate.

Guidelines

1. All new access and infrastructure will consider the visual and aesthetic impact of development while ensuring that other environmental concerns are met.
2. Use of existing rights-of-ways will be encouraged for new access and infrastructure.
3. Relocation or replacement of existing facilities to areas with minimal impact will be reviewed when existing facilities are upgraded or replaced.

2.2 Ecological and Aesthetic Resources

Ecological resources are unique or representative ecological features or systems that have been identified in the planning area. Aesthetic resources are the scenic landscapes that make up the planning area. The major impacts on the aesthetic resources of the planning area are from uses such as the quarrying operations, railways, highways and power lines.

The corridor has several ecological features worthy of protection through natural area designations. There is currently one established (Order-in-Council) and two candidate natural areas in the Bow Corridor. The established Canmore Recreation Natural Area is located adjacent to the Canmore Highway in part LSD 7 & 8, section 27-24-10-W5M, south of the railway. The candidate education natural areas are Canmore Flats in Zone 2 and Pigeon Mountain in Zone 3. The Canmore Flats Natural Area is located on the Bow River floodplain between the railway and the Trans-Canada Highway (part sections 14, 15, 22, 23, 26, 27, and 28-24-10-W5M). The site represents a diverse ecosystem and is important as a brown trout spawning area. The Pigeon Mountain Natural Area (part section 17-24-9-W5M) is representative of a montane forested slope and has unique cold sulphur springs and pools.

A natural area is being proposed by the planning team at East Canmore Flats encompassing Zone 3 lands. It is located on the Bow River floodplain between the Trans-Canada Highway and Highway 1A, bordering the candidate-Canmore Flats Natural Area, in part sections 13, 23, 24-24-10-W5M and in part sections 16, 17, 18, 20, 21, 22-24-9-W5M.

An additional natural area is being proposed by the planning team on the land between Mt. Laurie and Highway 1A (part sections 5 & 6-25-8-W5M, part 31-24-8-W5M). Yamnuska Natural Area in Zone 3 is one of the most ecologically

diverse localities in Alberta, with five ecoregions and over 300 vascular plants identified. This site has also been nominated as a natural area by the Bow Valley Naturalists.

Objectives

1. To preserve selected unique or representative ecosystems or features.
2. To provide for the recreational, scientific and educational use of ecological resources.
3. To protect and enhance the aesthetic and scenic values of the planning area while allowing for a range of resource uses.

Guidelines

1. The proposed natural areas (Yamnuska and East Canmore Flats) are recommended for designation by Order-in-Council. The exact areas to be included will be refined through the interdepartmental referral process and prior to the Order-in-Council.
2. Motorized recreational vehicle use will be prohibited on proposed, candidate and Order-in-Council natural areas.
3. Designation of additional natural areas may be recommended in the future when additional information is obtained.
4. The area in part NE, NW LSD 1, NE LSD 2, SE LSD 7 and LSD 8-25-24-9-W5M on which historical resource sites are found is recommended to be included in the Bow Valley Provincial Park and to be designated as Zone 3 in the interim.
5. Expansion to existing development and new development will be reviewed to minimize visual impact on the natural environment.
6. Assess the options available to minimize the dust problems associated with the low water levels on Lac des Arcs and recommend appropriate action.
7. Operating and reclamation plans have been prepared for the quarries and will be reviewed on an ongoing basis.

2.3 Fisheries

Sport fish in the corridor include mountain whitefish and brown, eastern brook, rainbow and bull trout. Mountain whitefish make up more than 80 percent of the sport fish population in the Bow River and are perhaps the only sport fish species that is under used (supply exceeds demand). Brown trout are the next most abundant sport fish in the Bow River, comprising less than 15 percent of the sport fish population.

The Bow River is the most important spawning and rearing area for mountain whitefish. Bill Griffiths Creek is the most important spawning area for brown trout in the Bow Corridor - about 60 percent of the corridor's brown trout spawn here annually. It is also important as a brook trout spawning area. Policeman and Canmore creeks are important spawning areas for brown and brook trout and important rearing areas for mountain whitefish.

The Bow River comprises the largest and most important sport fishery in the corridor. Other important fisheries are at Gap Lake which contains exceptionally large brown trout and mountain whitefish, and Grotto Mountain Pond and Quarry Lake which are stocked annually with rainbow trout. Angling is heaviest in the Bow River, Gap Lake, Grotto Mountain Pond and Quarry Lake (Canmore Mines #3). Moderate use occurs on Policeman Creek, Canmore Creek, Bill Griffiths Creek, Steel Brothers Beaverponds, Rundle Pond and Lac des Arcs.

Although demand data is unavailable at the local level, it is apparent that demand exceeds supply. Evidence of this is the need to stock new put-and-take fisheries, such as Grotto Mountain Pond, at least twice a year with catchable (>15 cm) rainbow trout to meet the demand. Despite the creation of these new fisheries, creel surveys done in 1983 and 1987 reveal that heavy fishing pressure results in many put-and-take fisheries being "fished out" within weeks after stocking. Although no comparable data is available for the wild trout fisheries, it is apparent that heavy fishing pressure has reduced the size and number of trout in readily accessible areas. Factors reducing this impact are the inherent wariness of brown trout and the lack of access points along the Bow River.

The capability of the existing fisheries in the planning area to meet angling demand is limited. The potential to increase stocking rates and frequency is constrained by the limited production capacities of the provincial hatcheries.

There is some potential to increase angling opportunities in the corridor. Improving access along the Bow River may be one way of enabling anglers to harvest more mountain whitefish, which are probably capable of handling greater harvest rates. However, this would likely have a detrimental effect on brown trout which are the preferred sport fish in this part of the Bow River. Exshaw Lake and McGillivray Pond are both very productive and could provide good fisheries if stocked early in the year with 10 cm to 15 cm long fish. Both ponds are prone to

winterkill but could overwinter fish if deepened slightly. Factors preventing stocking are safety concerns, such as blasting at the limestone quarry adjacent to Exshaw Lake and the difficulty in providing adequate merge lanes for vehicles to pull off, and back on, Highway #1 at McGillivray Pond.

Quarry Lake (Canmore Mines #3) has the potential to produce more fish, and/or larger fish, if productivity is increased. One way to improve productivity is to add wheat to increase food supply. Because Quarry Lake is deep and has good oxygen levels throughout the winter, the process of vegetation decay should not cause winterkill.

There is some potential to improve the brown trout fishery in the Bow River by improving spawning and rearing habitat for brown trout. In 1987, a Buck for Wildlife project was carried out on Bill Griffiths Creek which made such habitat improvements. Similar Buck for Wildlife projects on this and some of the other trout spawning/rearing areas such as Policeman and Canmore Creeks could be of considerable benefit in the Bow Corridor.

Other uses of fisheries resources, in addition to fishing, are viewing or interpretive programs. Such programs would be beneficial because they emphasize the non consumptive aspect of the fishery and are of interest not only to fishermen but non-fishermen as well.

Potential to improve the fisheries is also affected by land use. Siltation of streams is a major concern. Siltation in Policeman Creek has resulted in serious habitat deterioration and loss. Although serious damage also occurred in Canmore Creek from siltation, TransAlta Utilities rectified some of the problems in 1987. The use of jet boats on the Bow River has caused some shoreline erosion and river siltation which could grow with increased use. Another concern is the deposit of limestone dust into Steel Brothers Beaverponds, which has resulted in alkaline conditions. The highest pH level recorded in these ponds is 9.2 which is near the upper limit at which brook trout are known to occur. (Normal range for these fish is 4.1 to 9.5).

Objectives

1. To maintain current levels of viable populations of wild fish stocks.
2. To enhance existing fisheries and create new fisheries wherever possible.
3. To maintain and enhance the fisheries habitat.
4. To promote non consumptive use of the fisheries by both locals and tourists visiting the area.

Guidelines

1. Review tourism/recreation and industrial development proposals and recommend means to minimize any negative impacts.
2. Periodically monitor the population density, age-class structure and growth rates of sport fish in the Bow River, to determine whether adequate recruitment is occurring and to ensure that overharvest is not occurring.
3. Conduct a creel survey of anglers fishing the Bow River to determine catch rates for various sport fish and the level of harvest by anglers.
4. Evaluate the sportfishing regulations for the area to ensure that optimal sportfishing opportunities are provided, while ensuring that adequate protection is afforded to the sport fish, and to ensure that viable wild fish stocks are maintained.
5. Provide information on key fisheries areas and conditions such as timing constraints in response to referrals.
6. Monitor and enumerate brown trout spawning in Bill Griffiths Creek and, to a lesser extent, in other spawning areas along the Bow River, to determine the extent and relative importance of brown trout spawning in each area.
7. Install additional fish cover where possible in Bill Griffiths Creek to increase the areas used by spawning brown trout.
8. Monitor angler use and harvest on Gap Lake to determine whether the current fisheries management plan is adequate or whether special regulations are warranted.
9. Determine feasibility of enhancing productivity in Quarry Lake through the addition of wheat.
10. Determine, in 1990, whether fish are present in Pigeon Creek and Heart Creek and, if so determine their distribution, species composition, relative abundance, population density and growth rates.
11. Assist with the development of an interpretive program focused on spawning brown trout in Bill Griffiths Creek. Excellent potential exists to attract thousands of visitors to the area from early October to mid-December to view spawning brown trout and at other times of the year to look at the redds (spawning beds) and a pristine stream.

2.4 Forest Resources

The planning area is almost entirely in the White Area and includes portions of the BO1 and BO2 forest management units. A small portion of the planning area, in the Wind Creek/Pigeon Mountain area, is located within the B7 forest management unit. Forest stands are primarily composed of lodgepole pine, white spruce and aspen with a lesser component of Douglas fir generally found on south-facing slopes.

The forest is well distributed in terms of age-classes, ranging from young to mature with a small component of overmature stands. Preliminary indications show that the planning area supports a total volume of 634 860 m³ of timber, of which 29 percent is considered to be presently inoperable as the result of steep terrain and limited access. There are no timber quota allocations or plans for sustained-yield timber operations within this planning area.

The occurrence of forest cover and settlement in the planning area adjacent to the Rocky Mountains Forest Reserve suggests a moderate to high potential exists for wildland fires originating either within the forest reserve or settled areas. The Alberta Forest Service is responsible for the prevention, detection and suppression of all wildland fires in the planning area exclusive of those in towns, villages and hamlets; action on the latter fires will be taken in cooperation with local planning authorities who are responsible for structural and other fires associated with settled areas.

There are several communities and recreational attractions located within and adjacent to the planning area. Other forest protection services offered include consultation with local planning authorities, communities and residents to provide information as to how to reduce the risk and severity of wildland fires within urban/rural areas, and monitoring forest conditions with respect to insects and disease. Evidence of dwarf mistletoe infestation has been found within the planning area.

Forest management in the planning area will focus on the maintenance of forest conditions amenable to the recreational intent and attractions of the area, and will emphasize public safety and the protection of natural resource values.

Objectives

1. To manage forest resources in a manner compatible with the intent of the planning area and resource values.
2. To protect the forest from damage or destruction by wildland fires, insects or disease.

3. To minimize the risk and severity of wildland fires associated with the urban/wildland interface.
4. To promote the reforestation of reclaimed industrial lands.

Guidelines

1. Forest resources will be managed by the Alberta Forest Service to complement the recreational/tourism intents specified for the planning area. The planning area will not be considered for long-term allocation of timber resources (e.g., timber quota allocations).
2. Utilization of timber resources will generally be limited to the provision of forest products for local residents (e.g., post, pole, fuelwood) or small scale commercial operations compatible with Eastern Slopes Zoning policy. Timber harvesting will also be considered should sanitation/salvage treatments be required to control the spread of insects and disease, utilize firekilled timber or for wildlife habitat enhancement projects.
3. All timber harvest operations, including those prescribed for sanitation/salvage or wildlife management purposes, will be conducted using forest landscape management techniques applied in the Bow Crow Forest following principles contained in the Forest Landscape Management Guidelines for Alberta (FLW Publ. No. T/125, 1986). Reforestation following sanitation/salvage operations will occur in accordance with established reforestation policies and regulations.
4. The Alberta Forest Service will maintain wildfire prevention, detection and suppression resources within the planning area and will take appropriate action on wildfires as required. Insect and disease conditions will be monitored and control actions initiated in the event of an outbreak. Where practical, prescribed burns may be considered for the overall management of forest resources to both reduce fuel loading and the associated risks to public safety from potential wildfires; to assist with the management of forest insects and disease; and to enhance wildlife habitat.
5. Consultation with local planning authorities, communities and residents will be undertaken to minimize the risk and severity of wildland fires, to maintain public safety and the protection of natural resources. Consultations will include opportunities to provide input to residential and tourism/recreation-related development plans. Fuel modification programs will be considered and undertaken as required within or adjacent to settled or intensively developed areas.

6. The Alberta Forest Service will consult with and provide advice to the Public Lands Division regarding the potential for reforestation of lands disturbed by development.

2.5 Historical (palaeontological, archaeological and historical) Resources

Several field studies indicate that this area may be one of the richest in the entire Eastern Slopes for the presence of significant prehistoric sites. Over 30 sites have been recorded to date during research and impact related studies. The area is considered important for several reasons.

First, it is contained within the southern portion of the presumed "Ice Free Corridor.", stretching along the eastern flanks of the mountains. It is widely believed that the first Native Americans entered continental North America through this area from the Alaska/Yukon region roughly 15 000 to 12 000 years ago. Sites relating to this first human migration may be present in the sediments of the Bow Corridor. One of the earliest dated sites in Canada (10 500 years old) was recorded in the Bow Valley west of Banff, and several other sites inside Banff National Park boundaries demonstrate the potential of this region for very ancient archaeological sites. Recent investigations have served to confirm the potential of certain landforms in this planning area to contain sites of international significance.

Second, the planning area is located in the transition area between the plains and mountain ecosystems. It is here that the plains bison came to overwinter, sheltering in the wooded river valleys and grazing on the grassy slopes kept snow-free by chinook winds.

The prehistoric sites identified to date indicate that exploitation of local and seasonally available game herds by prehistoric natives was a common and recurrent activity over the last 10 000 years. Campsites, kill sites, and game processing sites have been recorded in this area, some containing extremely long records of use. Many more sites are undoubtedly concealed within accretional landforms or on topographic features not yet examined.

Third, the Bow Valley is a major travel corridor connecting the Alberta plains and the interior of British Columbia over easily traversable passes. The Kutenai Indians of B.C. are known to have made three journeys annually over the mountains to hunt bison in the Alberta foothills. These patterns of movement may be typical of much of the prehistoric period, and sites representing such occupation of the area may be present. In fact, the rather unusual styles represented by pictographs (paintings on rock) found in the area may relate to the presence of non-plains oriented groups.

Beyond the known sites in the planning area, it can be expected that a wide variety of landforms may contain significant prehistoric sites. These include river

and creek terraces, alluvial fans, outwash terraces, lakeshores, rock faces suitable for artwork and bedrock and gravel exposures of stone suitable for tool manufacture.

The North West Company surveyor, David Thompson, together with fur trader Duncan McGillivray, travelled south of Rocky Mountain Post in 1800, approaching the Bow River by way of the Kananaskis River and then travelling westward to the "Gap" before reaching the present town of Canmore. Though Thompson and others may have travelled the region both before and after that date, the Thompson-McGillivray journey is the only one recorded previous to the two expeditions led by James Sinclair in 1841 and 1853. Son of a Hudson's Bay Company factor and a "partly Cree" woman, Sinclair on both occasions took parties of settlers along the Bow River past the Gap and the flats near present-day Canmore, and through the Rockies to the Columbia Valley. In 1841, they used the Spray Lakes Valley route, and in 1853, they used an alternate, very difficult route through the Kananaskis Valley, presumably through North Kananaskis Pass.

The take-off point for Sinclair's expeditions was Old Bow Fort, the site of a post built just east of the confluence of the Kananaskis and Bow Rivers in 1832 by the Hudson's Bay Company, but abandoned and partly demolished just two years later. The Methodist missionary, Robert T. Rundle, travelled widely from his base at Fort Edmonton, and in 1844, he made his way from Old Bow Fort westward to camp in the Canmore flats and climb Terrace (now Rundle) Mountain. Rundle worked hard among the Stoney Indians, learning their language in order to translate scripture and hymns, and conducted worship services as well as marriages, baptisms and funerals. Another missionary, the Jesuit Father de Smet, came to the area from the United States by way of White Man's Pass and the Spray Lakes Valley, camping on a small meadow used by the Indians in the Canmore area. His party met two British army lieutenants going the opposite way through White Man's Pass, H.J. Warre and M. Vavasour, and their party of 12, who were collecting boundary information. Before he left via Lake Minnewanka and Devil's Gap, Father De Smet made special note of the evident coal resource.

Resource exploration drew the most famous expedition through the area in 1858, the scientific observers from Great Britain led by Captain John Palliser. Not only did James Hector (geologist and naturalist) and John W. Sullivan (astronomer) explore the Bow River into the Kicking Horse Pass, but Palliser himself took a party, along the river he named Kananaskis, in search of the pass Sinclair had told him about. Though Palliser's expedition was recorded in the most detail, he also encountered other travellers, including gold seekers travelling through the Kananaskis and Bow valleys en route to Fraser Valley and associated gold strikes.

Following the transfer of Hudson's Bay Company territory to Canada in 1870, surveys proliferated. Sandford Fleming coordinated the work of up to 2000 field surveyors, many of them exploring mountain passes, for the anticipated Canadian Pacific Railway in 1871-72. Related surveys continued for many years following. The Dominion Land Survey created in 1869 gradually got work underway that would entail mountain work as well. After the Canadian Pacific Railway Company decided

on the Kicking Horse Pass route in 1881, more detailed survey work under the direction of Major A.B. Rogers continued from camps moving gradually from Old Bow Fort to Canmore. In 1883 Canmore became a divisional point and began to accumulate railway and town facilities until in 1899 its repair shops were moved to Calgary and the divisional point to Lake Louise.

There are historical sites associated with the history of railroads, coal mining, other mineral resource extraction industries and lumbering. The Bow River Corridor was the route for the first Canadian transcontinental railway. Railway-related resources were concentrated at the old townsite of Kananaskis, or Padmore, as it was originally called, and Canmore. The geography of the Bow River at this location provided space for town development and an entrance to the mountain ranges, thus making it suitable as a base of operations for further westward construction and for operation of the railway after construction was over. Canmore, the most important of the two townsites, served as a divisional point where train crews were stationed and locomotives were serviced. Railway buildings included a roundhouse, residences and commercial buildings.

The Marsh Coal Mine opened in 1884 at a location south and east of Canmore. In 1887, the Canadian Anthracite Coal Company opened a mine on the south side of the Bow River, across from the original railway townsite of Canmore, and continued to operate until 1911. A second mine site, opened in the same general location in 1908, would continue to operate through to the mid-1970s. A second Canmore townsite developed adjacent to the mine sites. Another coal mine established at Georgetown ceased operations in 1916.

The Western Canada Cement and Coal Company established the old town of Exshaw in 1906. Lime kilns were also operated at the old town of Kananaskis by McCanleish and at a site halfway between Exshaw and Canmore by Butchert. The cement plant at Exshaw survived to become an established part of the economic base of the area.

During the early 1880s, Col. James Walker's Eau Claire Mill was located at Kananaskis, but the activities of his company expanded into the Kananaskis valley and thus away from the area under review. The only logging in the study area for a prolonged period was undertaken by the coal mining companies to provide timber for mine props.

The recreational use of this area developed to a large extent in recent years. However, the area was once part of Banff National Park, but was removed because of the mining activity. In several specific locations, therefore, industrial, residential and institutional remains may still exist, and be worthy of presentation and interpretation.

This resource planning area is highly varied in its topography and geology. Much of the valley floor is covered by recent and Pleistocene sediments. Many of the tributaries and mountain ridges paralleling the plan area have excellent bedrock

exposures, as do a number of road cuts. The age of the exposed bedrock units ranges from Cambrian to Cretaceous.

No known sites with significant fossils have yet been discovered within the corridor, although there are abundant fossil resources present.

Rat's Nest Cave is a unique example of cave travertine deposits, the most extensive in any readily accessible cave in Alberta. These features, which take many thousands of years to form are highly susceptible to damage through use of the cave. Unrestricted use in the past has resulted in considerable damage to the cave environment. Consequently, the cave was designated as a Provincial Historical Resource. Designation as such provides the ultimate protection afforded to an historical resource site under the Historical Resources Act. Proposed activities involving surface development may have an adverse effect on the cave system.

Objectives

1. To protect and/or preserve historical resources (archaeological, palaeontological, historical and natural) as defined in the Historical Resources Act from potential or actual impact related to future resource developments.
2. To manage historical resource sites for scientific, educational and interpretive purposes.
3. To ensure the protection of Rat's Nest Cave, a Provincial Historical Resource, situated in; E 1/2 24-24-10-W5M, and S 1/2 19-24-9-W5M.

Guidelines

1. Resource uses in the planning area involving land surface disturbance may require Historical Resources Impact Assessments prior to development.
2. The Archaeological Survey of Alberta, Resource Management Section, will participate in the land use referral process to review proposed development projects within those areas of the Bow Corridor considered to have high historical resource potential.
3. To facilitate this referral process, Alberta Culture and Multiculturalism will develop an historical resource sensitivity map for the planning area. It will outline areas of historical resource potential for which Alberta Culture and Multiculturalism requests referral of proposed development projects. This map is to be distributed to other agencies involved in land management for their reference during the course of the regular referral process.

4. Alberta Culture and Multiculturalism will identify types of development projects to be referred at the implementation stage of this plan.
5. Identified historical resource sites will be evaluated and protected and/or preserved as warranted.
6. Significant historical resource sites are identified by the following Zone 3 locations;
 - a) Pt. N 1/2, 7-25-10-W5M
 - b) Pt. SE 1/4, 7-25-10-W5M
 - c) Pt. NW 1/4, 22-24-9-W5M
 - d) Pt. SE 1/4, 21-24-9-W5M
 - e) Pt. N 1/2, 24-24-9-W5M
 - f) Pt. NW 1/4 of 30 and SW 1/4. 31-24-8-W5Mand g) SE 1/4, LSD. 2-29-24-9-W5M located in Zone 1.
7. Access to Rat's Nest Cave will be controlled through the installation of a locked gate.
8. An Access Management Plan is being initiated to determine the conditions under which access to Rat's Nest Cave will be permitted.
9. Any proposed development activity in the area designated as a Provincial Historical Resource for Rat's Nest Cave requires the written permission of the Minister of Culture and Multiculturalism.
10. Development proposals will be reviewed to determine the possible impact to the cave system.

2.6 Minerals

Mineral extraction has occurred in the Bow Corridor since the 1880s. No coal mining occurs in the area now, but there were both surface and underground mines. Two small surface mines, which were located west and northwest of Canmore and just across the river, extracted most of the surface mineable coal. Underground mining along the flats between Cairnes Creek and the powerhouse resulting in over 10 million tonnes of coal being recovered. The Canmore Mines underground mine was operating until the late 1970's. Roughly estimated, 140 million tonnes of underground mineable coal reserves (semi-anthracite to low volatile bituminous) is still available in the Canmore coal field, which covers most of the southwest portion of the corridor and beyond to the southeast. This is the only deposit of semi-anthracite in Alberta. There are no coal leases nor coal lease applications in the corridor; however, there are considerable freehold coal rights. The potential for production of coal is entirely dependent on world coal markets. The international

demand for semi-anthracite coal recently has increased slightly but no major demand growth is foreseen.

The Bow Corridor is the most important area in Alberta for the production of quarriable minerals; it also has the greatest potential for additional development. Lafarge Canada Ltd. extracts limestone and shale for use in the production of cement at the company's Exshaw plant site. Continental Lime extracts limestone for the production of lime at the company's plant site located near the site of the old hamlet of Kananaskis. Thunderstone Quarries Ltd. extracts shale in the form of Rundle rock building stone at a quarry near Dead Man's Flats. G. & D. Sand Aggregate Developments Ltd. removes limestone from a surface stockpile for use as riprap material.

There are presently four active and three inactive quarry operations on public land that are held under surface disposition in the planning area. Several other areas are held under Quarriable Mineral Leases. Most of the quarriable mineral dispositions are located on the north side of the Bow River, although favourable rock formations (the Livingstone, Palliser and Eldon formations) are found on both the north and south sides of the Bow Corridor. Potential expansion of quarrying in the corridor is dependent on the regional economic growth of the prairie provinces, especially in the construction sector, and on regional development and expansion of specialized rock products markets.

No petroleum or natural gas resource has been discovered in the corridor. Very little evaluation has been done in this area of extremely complex geology. Only one unsuccessful exploration well has been drilled. At present all of the Crown's petroleum and natural gas resources are undisposed.

Removal of surface materials has occurred throughout the corridor in the past. The highest quality surface material is located immediately on the north side of Highway 1A in part section 23, 24 and 26 of 24-10-WM5. There are presently 12 areas under disposition for surface material removal. All but one are located in the Seebe area. The lease areas at Seebe will receive only minimal use as long as the Burnco Rock Products Ltd. lease at Canmore is operational. The additional hauling costs from Seebe to Canmore make the operations uneconomical at present.

Employment and revenue, generated by exploration, development and processing of mineral resources, are important to the economic health of the province and the Bow Corridor where these activities take place. The Lafarge Canada quarry and cement plant, the Continental Lime quarry and lime plant and the other quarries and mineral operations are substantial contributors to the economy of the planning area. Opportunities exist here for increased mineral production. The mineral deposits, the infrastructure and the location of the corridor all contribute to these opportunities.

Objectives

1. To provide opportunities for mineral exploration and development and surface materials exploration and development.
2. To maintain opportunities for the production of quarriable minerals and for the uninterrupted operations of existing mineral processing plants.
3. To continue providing opportunities for processing of minerals and to ensure product accessibility to transportation facilities.
4. To progressively reclaim the areas disturbed by mineral and surface material extraction as specified in reclamation plans approved by the Department of Forestry, Lands and Wildlife.
5. To ensure safety of the public with respect to surface developments and land use in the vicinity of abandoned underground coal mines.

Guidelines

1. Exploration and development of quarry rock, metallic minerals, petroleum and natural gas and other minerals except coal may be generally permitted in Zones 2, 5 and 7 and will be reviewed according to the current approvals processes. Mitigation will be necessary to ensure that significant visual impacts or significant impacts on watercourses, fish and wildlife, tourism, and recreation do not occur.
2. Quarrying at existing operations on the north side of the Bow River will continue. Quarrying expansion or new quarries will be considered on existing quarriable mineral leases and on adjacent geologically favourable areas (Zone 5A).
3. Quarrying at existing operations on the south side of the Bow River will continue. Quarry expansion or new quarries will be considered only on existing leases at Dead Man's Flats and at Seebe north of the Bow Valley Provincial Park.
4. New limestone quarrying leases (surface or subsurface) will not be issued south of the Bow River.
5. Quarrying will not be allowed in the vicinity of Heart Mountain. The three quarriable mineral leases and the mineral surface lease issued for purposes of limestone quarrying will be cancelled.
6. Coal exploration and development will not be allowed in any zone in the planning area. Crown coal resources will not be available for leasing.

7. The surface material lease of Burnco Rock Products Ltd. on NE 23, 24-10-W5M; and the disposition reservation of Alberta Transportation in NE 32, 24-8-W5M, and SW 5, 25-8-W5M. will be allowed to continue until the resource has been depleted. The existing lease and reservation areas will not be expanded.
8. Extraction of sand and gravel will be permitted only in the area east of Highway 1A and north of Highway 1X in the Seebe area.
9. Surface material removal of peat or topsoil will be considered on a site-specific basis.
10. Proponents of any surface development or land use on a site overlying, or in the vicinity of an abandoned underground coal-mine will be required to investigate, assess and mitigate any related constraints to development as a condition of obtaining the appropriate approvals.
11. The approving authorities, having development control of private lands overlying abandoned underground coal mines, are encouraged to adopt similar requirements to guideline 7 and are also encouraged to amend their by-laws accordingly.

2.7 Range Resources

Domestic grazing has occurred in the planning area since the turn of the century. The loss of productive rangelands to brush encroachment on the south-facing slopes has contributed to the reduction in forage available for domestic livestock and wildlife. Competition for the land base by intensive recreation, residential, commercial and industrial uses has increased. Issuance of yearly permits rather than long-term lease areas was recommended to reduce the length of time required to transfer lands from grazing to intensive uses. Miscellaneous permits for horseholding areas have been issued to provide areas for stabling horses rather than grazing horses.

There are presently seven grazing permits in the planning area which cover 1280 ha (3170.61 ac.) and provide 637 AUMs of grazing. The Kananaskis Guest Ranch Ltd. and John Boychuk hold the majority of the land - 1070 ha (2650 ac.) and 509 AUMs of the total. Three miscellaneous permits for horseholding have been issued in the planning area.

The potential for increased grazing in the planning area is limited due to the heavy forest cover, steep topography and competition with ungulates for winter range. Issuance of additional miscellaneous permits for horse-holding areas may offset the demand for grazing lands.

Objectives

1. To maintain the present levels of domestic grazing where feasible.
2. To reduce the competition between domestic livestock and wildlife for the existing forage on winter range.
3. To maintain the rangelands in good condition for use by domestic livestock and wildlife.

Guidelines

1. The existing grazing permits will be allowed to continue until the land is required for industrial, commercial, tourism or intensive recreation use.
2. Range improvement to increase or regain Animal Unit Months lost to brush encroachment will not be permitted due to the high recreational value of the land.
3. Miscellaneous Permits for horse-holding areas will be permitted on a site-specific basis.
4. If a conflict for use of available forage develops between domestic livestock and wildlife, the domestic livestock levels of grazing will be reduced.
5. Carrying capacities will be set to maintain the rangelands in good condition.

2.8 Settlement

The town of Canmore and the unincorporated communities of Harvie Heights, Exshaw, Lac des Arcs and Dead Man's Flats had a total population of 5428 in 1989. Of this, 4833 lived in Canmore. In 1966 and 1971 the population of the Bow Corridor was split roughly in half between Canmore and the remaining settlements. From 1971 on, the population of Canmore increased dramatically while the total population of the unincorporated centres decreased. This shift was mainly due to the elimination of 50 dwellings in Exshaw by the LaFarge Canada expansion in 1973 and the annexation of West Canmore in 1978.

The population of the corridor increased by over 50 percent between 1976 and 1986, and the population of Canmore more than doubled over the same period. A number of circumstances combine to make continued growth likely for Canmore and the entire corridor's continued growth likely. First, the recent Banff Core

Concept has limited further expansion of Banff townsite. As a result, demand for housing and tourism-related facilities will be directed toward the corridor. In 1986 Banff had a population of 5189. Second, the development of Kananaskis Country has increased the demand for recreation-related services in the corridor, since Canmore is the major centre for such activities in the area. Third, the 1988 Winter Olympics brought international attention to the corridor. It is possible that the population of Canmore could increase to 10 000 (the minimum population for city status) by the year 2000.

There is potential for large scale tourism developments in the corridor. Staff housing and associated services could arise around these developments with the result that new communities would be developed. This could create demand for additional infrastructure and demand for public land.

Objectives

1. To provide the land base for future residential, commercial and industrial expansion of the existing urban settlements as required.
2. To encourage that services associated with tourism or other developments be directed to the existing communities.
3. To encourage future residential and commercial development infill on privately owned land prior to expansion onto public land.
2. To increase the opportunity for recreational housing.

Guidelines

1. Residential subdivisions on public land will be permitted only within the boundaries of existing urban settlements.
2. Residential and commercial development will be encouraged to infill on privately owned land within the existing urban settlement prior to expansion onto public land.
3. Residential expansion of existing towns and hamlets will be supported.
4. Services associate with tourism or other developments will be directed to the existing communities.
5. Recreational housing will only be permitted in conjunction with major tourism facility development.

2.9 Tourism/Recreation

For the purposes of this section, tourism refers to facilities, services and attractions that have a commercial orientation and are generally developed by the private sector. Recreation, on the other hand, refers to activities, facilities, services and attractions that are extensive or dispersed in nature, nonprofit oriented, and owned by the public or nonprofit sectors.

Tourism is Alberta's third largest industry next to energy and agriculture, and is vital to the diversification of the province's economy. Current tourism revenues of approximately \$2.5 billion per year are targeted to rise to \$10 billion (current dollars) by the year 2000.

The Bow Corridor has started to evolve into a major provincial tourism destination area. Its recreational and tourism significance has been recognized only within the last 10 to 15 years (compared to nearby Banff National Park and Banff townsite, which have a tourism destination history in excess of 100 years). The Bow Corridor is emerging as an alternative national and international tourism development/destination area to Kananaskis Country and Banff National Park.

The Bow Corridor planning area is located within Alberta Tourism Zone 10 (Calgary and area). Total tourism expenditures by Albertans and visitors in Zone 10 for 1988 were estimated to be about \$643 million or 26 percent of the provincial total; however, that proportion which is attributable to the Bow Corridor is unknown. There are 18 commercial hotel/motel/cabin establishments, one guest ranch and one hostel in the planning area, providing approximately 500 accommodation units listed in the Alberta Accommodation Guide (Alberta Hotel Association, 1989).

Currently, tourism services in the area account for a significant portion of the retail and service economy (e.g., Canmore - accommodation, food and beverage receipts contributed over 90 percent of gross dollar receipts of total service trade). The private sector has made a major commitment to tourism in the area.

The Bow Corridor, as well as being a growing tourism destination area, provides an access and support function for the region and adjacent major tourism destination areas. In addition to the fixed roof accommodation facilities previously identified, a variety of other tourism services and products are provided in the Bow Corridor. These include food services, vehicle services, cottaging, heli-touring, heli-hiking, mountaineering, paddling and whitewater rafting, trail riding, cycling, golfing, ground tours and RV camping.

The planning area is noted for its diversity of recreational uses. Most of the recreational use originates from the city of Calgary and surrounding communities east of the planning area. However, transient recreational use associated with tourist travel on the Trans-Canada Highway is increasing, and hence will become a

greater factor in the future. The planning area has in the past been an overflow for tourists using Banff National Park. A spin-off benefit from the 1988 Olympic Winter Games, which were held in the Canmore area, will be an increased use of the area for recreation.

Typical recreational pursuits in the planning area include the following: unserviced and walk-in camping, picnicking, bowhunting, fishing, hiking, mountain climbing, ice climbing, canoeing, hang gliding, snowmobiling, cross-country skiing, trail riding, wildlife and nature appreciation, cycling, board sailing and motorized recreational off-highway vehicle use.

Recreational motorized vehicle¹ use (off-road) is a legitimate use of public land in appropriate areas in the corridor. However, this type of activity has occurred on environmentally sensitive areas and indiscriminant use has the potential to cause additional impact on terrain, vegetation, wildlife and water quality. Requests to provide suitable areas for recreational motorized vehicle use have not been accommodated to date. The potential for providing large areas for this use is low due to the highly erodible nature of the slopes and the lack of contiguous vacant public land that is not separated by private land or lease areas. Demand for suitable areas will continue to increase in the future.

Summer motorized recreational vehicle use is highest in the Pigeon Mountain/Wind Valley area and on adjacent private land in the south corridor and on the benchlands east of Harvie Heights. Recreational snowmobiling is most common south of and adjacent to the Trans-Canada Highway between Pigeon Mountain and Canmore. Much of the activity is on privately owned land, but it also occurs on public land including the Wind Ridge, Wind Creek, West Wind Creek, Stewart Creek, Fall Creek and Three Sisters Creek areas.

There are three provincial recreation areas with overnight camping facilities (Bow River, Lac des Arcs and Three Sisters) located on the Trans-Canada Highway. There are also four day-use provincial recreation areas (Heart Mountain, Grotto Mountain, Gap Lake and Old Camp) in the corridor. Current use and demand are high at all of these sites except Old Camp, which was rated medium. The more popular hiking trails include; Grassi Lakes, Grotto Mountain, Heart Creek, Heart Ridge and Bow Valley. The Pigeon Mountain/Skogan Pass and Quaite Valley trails are also popular for mountain biking.

¹Recreational motorized vehicles (off-road) include motorcycles, ATCs, ATVs, 2x4 or 4x4 vehicles and snowmobiles. They do not include power boats, helicopters or mountain bikes.

The public land base presently supports one lease for a golf course, four leases for commercial recreation and six leases for nonprofit recreation. The Alpine Club of Canada, Kananaskis Guest Ranch and Alpine Resort Haven provide, on public land, fixed-roof accommodation from which both tourism and recreation uses originate.

Due to its scenic resources, existing tourism infrastructure and strategic location (on the Trans-Canada Highway between metropolitan Calgary, Banff National Park, and Kananaskis Country), the study area is experiencing increasing tourism demand. Moreover, new tourism development in Banff National Park and Kananaskis Country is constrained by federal and provincial government policies. During the summer, occupancy rates for fixed-roof accommodation and RV space are very high. Community Tourism Action Plans at the municipal level have recognized a need for additional golf courses, high quality RV parks, year-round camping facilities and a greater variety of fixed-roof accommodations e.g., bed and breakfast and a destination hotel with convention and meeting facilities (M.D. of Bighorn Tourism Action Plan, 1989; Town of Canmore Tourism Action Plan, 1989). The regional and international demand is also rising for golfing on "high country" courses.

Numerous development proposals for four-season resorts, RV parks, golf courses, second homes and conventional residential development are pending in the planning area. Many of these proposals, if implemented, would be located on public land or would have an impact on public lands. The public land base has the physical capability to sustain additional development in several locations (e.g., Seebe-Yamnuska, Dead Man's Flats-Pigeon Mountain, Lac des Arcs and the Benchlands areas). There are also significant tracts of private and municipal land available and suitable for tourism development in the planning area. The Bow Corridor also has the capability to provide for increased extensive and intensive recreation.

Emphasis on tourism and recreation in the planning area and the region has been reinforced through substantial direct and indirect provincial capital investment and operational programming (e.g., Kananaskis Country, Nakiska ski area, Kananaskis golf courses, and Nordic Ski Centre). The Bow Corridor is a significant, evolving provincial tourism destination. The two local municipalities, the MD of Bighorn and town of Canmore, also recognize and emphasize tourism development in their statutory land use plans and tourism action plans. More importantly, the private sector is demonstrating strong interest in developing facilities that will establish the Bow Corridor as a major tourism destination.

Objectives

1. To provide the opportunity for development of the Bow Corridor as a major, four-season tourism and recreation area for residents and visitors.

2. To provide public land for tourism development and a range of recreational opportunities where appropriate.
3. To maintain and enhance the scenic natural resource features which support the tourism and recreation destination intent.
4. To encourage all sectors within the tourism industry (public, private and nonprofit) to increase the quality and diversity of tourism facilities, services, attractions, events and supporting infrastructure.
5. To maintain and protect provincial recreation areas, and associated trails and trailheads.
6. To allow for limited summer and winter recreational motorized vehicle use occurring off-road.
7. To minimize conflicts between recreational motorized vehicle users and other resource users.
8. To minimize impacts on the environment and wildlife resources by recreational motorized vehicle use.

Guidelines

1. Tourism and recreational development with associated commercial uses will be directed to the Zone 4 (recreation) and Zone 8 (facility) areas. In these zones priority will be given to tourism and recreation development opportunities.
2. Encourage tourism developments to provide on-site accommodation for essential staff.
3. Ensure that access to adjacent public lands is maintained for recreation purposes when tourism developments are approved on public or private lands.
4. Maintain and provide areas for public access to trailheads and trails leading to extensive recreation use areas where appropriate.
5. Areas which are sensitive to motorized recreation vehicle use will be zoned as restricted land use areas. These areas include portions of the benchland on the north side of the Bow Corridor, Order-in-Council Natural Areas, proposed natural areas and critical wildlife areas of Pigeon Mountain and Wind Ridge.
6. Assist with development of tourism and recreation opportunities on public land through the disposition review process.

7. Urge the private sector, not-for-profit organizations, and municipalities to help maintain and enhance the corridor's scenic resources in the design, siting and operation of facilities.
8. Identify and evaluate tourism opportunities, requirements (siting, servicing, access) and potential impacts.
9. Provide incentives to stimulate private sector capital development and marketing for major year-round national and international tourism destinations, where applicable.
10. Assist with undertaking market assessments and economic feasibility analyses for tourism opportunities.
11. Provide planning assistance to municipalities in the preparation of Community Tourism Action Plans.
12. Provide cost-shared 75/25 percent grants (on a per capita basis) to municipalities, the private sector, and not-for-profit organizations, for eligible tourism-oriented capital development projects included in the Community Tourism Action Plans.
13. Provide tourism-business counselling services and facility planning advice.
14. Coordinate and assist corridor-related tourism planning efforts that have intergovernmental and interagency implications.
15. Provide marketing assistance through provincial promotions and through the Team Tourism Program at the tourist zone level.
16. Assist the tourism industry to improve the quality of product and service delivery through education programs, hospitality and awareness training, and staff certification standards.

2.10 Water Resources

The planning area is situated within the Bow River Basin, and a reach of the Bow River traverses the planning area from west to east. The Bow, a major tributary of the South Saskatchewan River, provides for a number of water uses downstream from the planning area, including domestic and municipal supply for a number of urban communities (including the city of Calgary), fish and wildlife habitat, recreation (public and commercial), irrigation, electrical power generation and waste disposal. It also contributes to Alberta's commitment to deliver a portion of the flow of the South Saskatchewan River system to Saskatchewan. Within the planning area, the Bow and its tributaries are used for water supply and waste disposal by the town of Canmore and a number of smaller communities, fish and

wildlife habitat, electrical power generation at the Rundle Plant (and at the Spray and Kananaskis plants on the boundaries of the planning area), and recreation, including fishing, boating, picknicking and camping.

Objectives

1. To maintain streamflows, protect basic water quality and instream uses to ensure that the Bow River and its tributaries are sustained for future generations.
2. To ensure that efficient and effective management of the water resources in the planning area continue to reflect the operational guidelines and administrative practices established under the Water Resources Act, and other Acts of environmental significance.

Guidelines

1. Continue to manage the river system on a multiple-use basis, for the benefit of all Albertans and downstream users.
2. Establish preferred and minimum instream flow requirements for the reaches of streams in the planning area.
3. Consider and implement effective measures to reduce the dust problem at Lac des Arcs which are environmentally and visually acceptable and preserve the intent of Zone 2.

2.11 Watershed

The planning area constitutes part of the upper portion of the headwaters of the Bow River watershed. The Bow River which flows through the centre of the planning area is regulated by Minnewanka and Spray dams. The major drainages are Canmore Creek, Cougar Creek, Policeman Creek, Stewart Creek, Three Sisters Creek, Pigeon Creek, Heart Creek, Jura Creek, Exshaw Creek and Grotto Creek. These drainages are locally important for their fisheries, wildlife and recreation values.

Objectives

1. To prevent vegetation changes that could cause extreme fluctuations in streamflow resulting in erosion of channel materials, high sediment loads, property damage or water supply problems.

2. To prevent or minimize soil erosion occurrences associated with land use activities.
3. To proceed with proposed reclamation projects on vacant public land where unacceptable environmental conditions exist.
4. To ensure that reclamation guidelines and standards are adhered to on surface dispositions and that reclamation is carried out on other land disturbances.

Guidelines

1. Watercourses in the Bow Corridor will be protected from siltation or pollution by enforcing setback and development conditions.
2. Reclamation projects will be initiated and completed depending on availability of funds where the responsibility rests with the provincial government.
3. Reclamation of land use disturbances will proceed progressively to reduce erosion and sedimentation. Reclamation will be included as a condition of surface disposition approvals and completed according to provincial standards.
4. Areas disturbed by land use activities will be reclaimed within one year of initial disturbance or on a progressive basis where disturbance is long term.

2.12 Wildlife

Approximately 300 bighorn sheep winter within the corridor on six key winter ranges. The population south of the Trans-Canada Highway (approximately 150 animals) constitutes half of the Mt. Allan herd and winters predominantly on Wind Ridge. Pigeon Mountain and Wind Mountain ranges harbour smaller numbers of sheep, which interchange with the core group on Wind Ridge. North of the Bow River, bighorn sheep use three main areas along Highway 1A during the winter.

During spring and summer, the majority of bighorn sheep leave these winter ranges and move to summer ranges at higher elevation. Lambing is known to occur in a number of areas but because of snow cover conditions at higher elevations, ewes are often forced to lamb on winter ranges. Summer range is generally more abundant and not as limited as are winter ranges. Sheep north of the Bow River move as far north as the South Ghost River. Known summer concentrations are

found along Exshaw and Jura creeks with the largest groups located at the headwaters of a branch of Cougar Creek. The Wind Ridge group summers in the Three Sisters area and further south near Mt. Allan.

There are two main groups of elk that consistently overwinter in the corridor. The group that uses the Pigeon Mountain/Wind Ridge area numbers around 120. The group that uses the Harvie Heights/Canmore area numbers about 150 head. These elk move seasonally throughout the planning area.

Elk also winter within the boundaries of Bow Valley Provincial Park with frequent excursions south across the Trans-Canada Highway. It is likely that a portion of the herd summers within the riparian zones of the Bow Corridor, similar to what occurs with the Banff herd of the upper Bow Valley. The remainder likely disperse north and south into the Yamnuska area and Kananaskis Valley.

Despite the availability of good habitat, moose are currently found in very low numbers within the corridor. The main reason for this is believed to be train- and highway traffic-related mortality. The low numbers may also be due in part to the presence of the giant liver fluke parasite.

Both white-tailed deer and mule deer can be found throughout the Bow Corridor. The white-tailed deer is more abundant towards the eastern end of the planning area, with mule deer more abundant west of Canmore in the subalpine zones.

Grizzly bear are only periodic visitors to the area and generally move in and out of the valley from the Spray and upper Bow valleys. Black bear, on the other hand, can be found throughout the corridor and inhabit most forested areas.

There are a number of furbearing species found within the corridor including marten, coyote, lynx, mink, beaver and muskrat. Cougar are found throughout the planning area with distribution being a reflection of their major prey species i.e., deer and elk. Wolves are known to use the southern portion of the corridor as an extension of their ranges from Banff National Park and the Spray Lakes area.

Ruffed, spruce and blue grouse are also found in the corridor. The most significant raptors in the planning area are eagles. Osprey are known to nest along the river. Bald eagles are seen frequently, especially during migration, and have nested within the valley. Golden eagles occasionally nest high in the mountainous cliffs overlooking the valley.

The Bow River and associated side channels and wetlands are used by a number of migratory waterfowl. These include Canada goose, bufflehead, common goldeneye, common merganser, common loon, and mallard. Lac des Arcs is an important staging area during spring and fall. Very few water bodies are available that are suitable for waterfowl staging along the Eastern Slopes of Alberta. Consequently, Lac des Arcs is significant to migrating waterfowl which use the

flyway through the corridor. Lac des Arcs, Gap Lake, Exshaw Pond and other lakes or ponds are used as feeding areas during the moulting period (June) by males and nonbreeders.

The corridor is unique in that both the rare northern long-toed salamander and the more common tiger salamander are found in the same area. Essential breeding ponds for these species differ in that the long-toed salamander requires small, nonflowing, shallow, temporary ponds, while the tiger salamander requires larger water bodies.

There are viewing and hunting opportunities within the corridor. Viewing of sheep along Highway 1A occurs, but is not encouraged due to the lack of safe pull-outs and the high volume of heavy trucks. Hunting is the major consumptive use of bighorn sheep within the corridor. Populations north of the Bow River are within Wildlife Management Unit (WMU) 410 which permits only bowhunting of trophy rams and nontrophy sheep (ewes and lambs). Bighorn sheep wintering south of the Bow River form part of the population within WMU 408 where rifle hunting of both trophy and nontrophy animals is permitted. The average number of hunters annually receiving nontrophy permits to hunt sheep within WMUs 410 and 408B are 40 and 55, respectively. The numbers of resident trophy hunters in those same WMUs has averaged 99 and 262, respectively, between 1982 and 1987. In addition, four licensed guide and outfitters receive eight permits to provide services to non-resident alien hunters wanting to hunt in WMU 410.

Most elk within the corridor can be hunted with bow only. Animals on Wind Ridge and within Wind Valley fall outside the bow zone (WMU 410) and in WMU 408 where rifle hunting is permitted. Between 1985-1987, an annual average of 478 resident, recreational elk hunters spent 3449 days hunting elk in WMU 410. In WMU 408, the average number of elk hunters was 677, with 4135 days of hunting in that particular WMU.

The guiding and outfitting industry benefits from these elk through income from guiding nonresident and some resident hunters. The harvest by nonresidents, who require guides, averages one a year in WMU 410 and five in WMU 408. Since there is no restriction on where nonresidents can hunt elk in Alberta, it is not possible to determine how many used guides and outfitters in these two WMUs. Four and sometimes five guiding operations work in part within WMU 410 each year.

Aside from beaver and muskrat being observed within the wetlands of the valley floor, viewing opportunities of furbearers are limited and infrequent. Only one permit is currently issued each year to trap on unoccupied public land. Approximately 20 marten, 5 coyotes, 2 lynx and 5 mink are taken annually. Trapping activities are restricted to the less accessible, forested areas along the southern boundary of the planning area because of conflict with vandals, cross-country skiers, hikers and domestic dogs frequenting the valley floor.

There are opportunities for viewing a variety of birds. The area is known best for sighting early spring migrants, e.g., passerines, waterfowl, hummingbirds and raptors. Hunting of upland game birds and waterfowl occurs within the corridor by bow and arrow only. South of WMU 410 in Wind Valley, hunting of upland game birds by means of firearms is permitted.

There is a considerable amount of human activity stemming from town site developments, industrial facilities, recreation/tourism facilities, and perhaps most important, from the use of the valley as a major east-west transportation corridor. Despite this activity, the capability of the area to support wildlife remains high. The potential to maintain and/or increase wildlife will depend on retaining habitat and minimizing disturbance to the wildlife.

Human activities affecting sheep population include traffic along Highway 1A, limestone and gravel extraction, helicopter tours and recreational vehicle use (off-road). Use of helicopters near sheep ranges is a major concern.

Vehicle-elk collisions have been documented along the Trans-Canada and Highway 1A. In 1986, 27 elk were killed, of which 91 percent occurred from east of Canmore to the Highway 40 junction. In 1987, 15 were killed along the same stretch of highway, and an additional six were killed on the railway. It has been estimated that prior to erecting the game fence along the highway just west of the Banff National Park boundary, 10 percent of the elk population was killed annually in this location. It appears highly likely that a similar percentage (and possibly higher) of elk within the corridor are being killed annually by vehicle and train collisions.

The sensitivity of elk to human disturbance has resulted in the abandonment of certain portions of the corridor. Figures indicate that historically large numbers of elk moved into the corridor both east and west of the present town of Canmore. Currently, Banff National Park elk do not move much further east than Harvie Heights despite suitable habitat being present along the benchland as far east as Grotto Mountain. Horse pastures, housing developments, industrial developments, golf course and cross-country ski areas all contribute to varying degrees to elk displacements. Recreational, municipal and industrial development pressure along the corridor could severely restrict access to winter ranges and cause a reduction in population size.

Objectives

1. To maintain current elk populations (i.e., a minimum of 270 elk) and bighorn sheep populations (i.e., a minimum of 300 sheep).
2. To maintain viable populations of moose, grizzly and black bear, cougar, wolves, and furbearers in a way that is compatible with a relatively dense human population.

3. To protect bald eagle, golden eagle and osprey nesting sites.
4. To maintain a diversity of habitat for maintaining bird populations.
5. To maintain long-toed salamander populations and protect their habitat.
6. To minimize impacts on wildlife populations from development and/or recreational activities.
7. To reduce the conflict between wildlife and people where human safety and/or property are at risk.
8. To maintain bowhunting as a recognized, legitimate recreational use, and as a wildlife management tool.
9. To increase viewing and interpretation opportunities for nonconsumptive use of wildlife resources.

Guidelines

1. Conduct wildlife studies to identify and evaluate habitat, key use areas and movement corridors; determine current use levels of various habitats; and identify reproduction rates and mortality factors.
2. Wildlife impact studies will be conducted by proponents of major recreation and tourism developments.
3. Provide information and conditions for proposed developments or activities when necessary to prevent net loss of wildlife numbers and/or habitat.
4. Assess the impacts of present recreational or industrial activities on wildlife and identify means to rectify these problems.
5. Locate and document key habitat types and high use areas, recognized as being essential to maintain current diversity and abundance of bird species and to implement necessary protection measures.
6. Identify amphibian brood ponds and implement appropriate protection as required on key areas. Until this inventory/evaluation process is complete, any activities or development proposals that may impact wetlands (even seasonal) will be reviewed to determine their significance to amphibians (with emphasis on the "rare" long-toed salamander). This review requires that wetlands involved be inspected during at least one spring and summer period.

7. Address situations such as wildlife on highways or depredation which pose an ongoing threat to human safety and/or property. Where wildlife (e.g., bear) present an immediate threat to human safety and/or property, efforts will be made to eliminate that threat by changing human activities (e.g., closing a hiking trail), wildlife behaviour (e.g., removing attraction) or removing wildlife (e.g., relocate or destroy).
8. Provide bowhunting opportunities for recreation purposes where there is a harvestable surplus of game and where this activity does not jeopardize or displace nonconsumptive uses of wildlife. Hunting seasons, bag limits and hunter densities will be managed in consideration of public/social tolerance.
9. Identify opportunities where wildlife can be viewed/interpreted by the public and implement in such a way that this use does not disturb or displace wildlife. Where such opportunities exist, nonconsumptive use will be promoted for recreational, educational, and where possible commercial purposes. Prior to the promotion of use of any specific species or location, the site, sensitivity and potential impacts will be assessed to determine appropriate types and levels of use, any protective legislation required and or site modifications/improvements necessary to facilitate this activity on a sustained basis.
10. A Wildlife Habitat Development Area will be considered for the critical wildlife area in the Wind Valley.

3.0 IMPLICATIONS

This section contains major results of the draft plan which should be considered by those who are responsible for reviewing the policy, and by others who will use it or are interested in its effects. Implications can be negative or positive; however, only the main effects are discussed here.

The plan addresses a broad spectrum of natural resource management concerns. The refined Eastern Slopes zoning helps identify the geographic location of resource management objectives. The policy document also contains positive future-oriented resource management objectives for each resource sector. These objectives provide targets toward which resource management agencies will work. The attainment of objectives will provide a net increase in social and economic benefits to users of the area.

The plan recognizes the planning area's importance as an industrial, transportation and tourism corridor. It provides the opportunity for the quarriable mineral industry to continue some exploration and development activity so important to the local economy. The objective to maintain the road and rail transportation network is also stated. There is demand for the development of the Bow Corridor as a major tourism destination area, and the plan will accommodate this demand.

The protection of scenic, aesthetic and ecological resources may affect the development of other resource uses in the valley. It will also provide a long-term opportunity for resource uses that are dependent on the natural mountain landscapes of the planning area.

Opportunities for quarrying are maintained north of the Bow River. The continuation or expansion of the existing quarrying and processing operations is assured so that all reserves can be extracted from existing quarrying operations. Possible quarry expansion north of the Bow River will cause additional visual impacts. Opportunities south of the Bow River are limited to the areas of Dead Man's Flats and Seebe north of the Bow Valley Provincial Park. Opportunities for development of Crown coal are eliminated, which affects about five sections of Coal Category 4 public land. No changes are proposed in regard to continued development opportunities of other minerals.

Opportunities for limestone quarrying are restricted, for aesthetic reasons, to selected areas of good geologic potential on solely the north side of the Bow River. The spatial and aesthetic constraints reduce the opportunity for new limestone quarries by new operators. In the very long term, local employment, income and municipal taxes from this source may be reduced and Alberta's self-sufficiency in lime and cement could be eroded. At some time in the future, the limitations on quarrying within the planning area may necessitate quarry expansion to less accessible mountain wildlands in other parts of the Eastern Slopes.

In ensuring public safety on lands overlying the abandoned underground coal mines in the planning area, it will be necessary for the approving agencies or authorities to require development proponents to undertake assessments, identify constraints to surface developments or improvements, and provide any necessary mitigation. This may increase the cost of development and result in increased approval time for specific developments.

Resource development in the planning area may result in impact to non-renewable historical resources sites. Historical Resources Impact Assessments may be required in areas considered to have high historical resource potential, or where historical resources sites are known to exist, prior to development proceeding. Such assessments and any additional work resulting from them, will be conducted at the expense of the development proponent.

Current uses of public land in the planning area do not seriously affect water quality or quantity in the Bow River drainage systems; however, local impacts (e.g., industrial and residential) continue to influence stream conditions in the planning area.

A range of existing and proposed tourism and recreation development opportunities are accommodated in the plan. A land base for the development of additional commercial tourism/recreation facilities has been identified. Existing extensive recreation activities and new opportunities are accommodated in this plan. The maintenance and protection of scenic values of the corridor will facilitate current and future tourism/recreation use of the area. Major tourism facility development will have access, infrastructure, employment, housing, servicing, social, economic and environmental implications, which development proponents and development agencies will have to address.

The plan provides the means to ensure that high fish and wildlife resource values are recognized during the management and development of resources. Objectives for the maintenance and enhancement of fish and wildlife populations will support the area's importance as a growing tourism/recreation corridor. The continuation and possible expansion of quarries in some portions of the area may be mitigated over the long term through reclamation and other means. However, tourism facility development infrastructure could result in habitat loss.

The policy document recognizes the need to provide a public land base for the possible expansion of settlements in the valley.

4.0 PLAN MANAGEMENT

General administrative procedures and mechanisms required for plan implementation, monitoring and amendment are outlined in this section. Detailed program and project implications resulting from this plan will be contained in an implementation document which will complement the plan.

4.1 General Administration

The Bow Corridor Local Integrated Resource Plan will be implemented within the terms of appropriate legislation, regular programs and activities of the government, operational plans, specific development projects, referral processes and administrative bodies. The revised zoning provides a means of processing applications for new public land dispositions within the planning area. Existing systems for referral and interdepartmental review will apply to the plan. Resources will continue to be administered by the departments responsible, in line with the approved zoning, resource management guidelines and any operational plans.

Government management agencies participating in the Bow Corridor Local Integrated Resource Plan will have several responsibilities to ensure the effective delivery of this plan. It will be their responsibility to deal with conflicts or concerns with respect to implementation or interpretation of any of the plan's provisions. These responsibilities are outlined below by subject area.

Referral Systems: Participating government management agencies will ensure that existing referral systems of the Alberta government are adequate to encompass all affected or concerned agencies.

Plan Monitoring: The Bow Corridor Local Integrated Resource Plan will be reviewed annually by the Eastern Slopes Regional Resource Management Committee to do the following:

- assess the relevancy of the stated resource objectives in light of changing conditions;
- assess the resource management guidelines and referral procedures;
- assess agency operational plans to ensure their consistency with the Bow Corridor objectives and guidelines; and
- recommend amendments to the Bow Corridor Local Integrated Resource Plan and future actions required to maintain or promote government resource management activities in the planning area.

An annual report will be prepared by the Eastern Slopes Regional Resource Management Committee and will highlight the previous year's activity in the planning area. It will also indicate what accomplishments are anticipated in the planning area during the next year. The report may be deferred if there is a lack of activity or progress on government resource management objectives within the planning area.

A major plan review by the Eastern Slopes Region Regional Resource Management Committee will occur when the plan becomes outdated due to significant changes and new priorities such as the following:

- a comprehensive assessment of all aspects of the plan including, but not limited to broad resource management objectives, land use zoning and resource management area boundaries and intents;
- a public review on the same basis as with the public involvement in development of new integrated resource plans; and
- a statement recommending amendments to the plan and future actions required to maintain or promote government resource management activities in the planning area.

4.2 Amendment Procedures

Changes to the planning area boundary, broad planning area resource management objectives, land use zoning, and the resource management area boundaries and intents that would result in significant changes to the allowed resource uses or priorities will require major amendment to the Bow Corridor Local Integrated Resource Plan. An amendment to the plan may be required as a result of an annual review, government requests or a request from an individual, group or organization outside the government. Proposed amendments to the Bow Corridor Local Integrated Resource Plan from outside the government should be made by formal application to the Assistant Deputy Minister of the Public Lands Division, Alberta Forestry, Lands and Wildlife*.

Opportunities for public review of proposed amendments to the Bow Corridor Local Integrated Resource Plan will be provided before changes are approved by the government. A decision on requests to amend an integrated resource plan will be endorsed by the Minister of Forestry, Lands and Wildlife or his designate. Amendments which entail a major policy decision or a change to the basic intent of the plan may be forwarded by the Minister to Cabinet Committee for approval.

*Guidelines for preparing requests for amendments to integrated resource plans are available upon request.

APPENDIX A

POLICY AND PLANNING CONTEXT

Resource management activities in the Bow Corridor Planning Area are guided by numerous government directives including legislation, policies and regulations. The Public Lands Act provides the legislative authority for public land management and planning. Legislative authority for the management and planning of resources covered by this plan is provided under a variety of other legislation (e.g., Historical Resources Act and the Wildlife Act). The following directions provide the context for development of the Bow Corridor Local Integrated Resource Plan.

A.1 Canmore Corridor Local Integrated Land Management Plan

The Canmore Corridor Local Integrated Land Management Plan was completed in 1979 in response to the need for detailed land use planning. The plan provides a framework for development on public land in the corridor. The plan does not refine the Eastern Slopes zoning originally provided in the Eastern Slopes Policy.

A.2 White Area/Green Area

The White Area and Green Area were established by Order-in-Council under the Public Lands Act in 1948. Almost the entire Bow Corridor planning area is within the White Area. Approximately 9 km² (3.5 sq. mi.) of land is located in the Green Area in the Wind Creek, Pigeon Mountain and Heart Mountain areas.

A.3 A Policy for Resource Management of the Eastern Slopes

A Policy for Resource Management of the Eastern Slopes - Revised 1984 provides direction for resource management and planning for the entire Eastern Slopes policy region. The document is split into a policy component and a regional plan.

The regional plan for the Eastern Slopes provides more specific resource management direction in the form of regional resource management objectives, land use zoning and resource management guidelines. Objectives are provided for 10 resource sectors, and eight regional land use zones are used to designate areas for

varying degrees of protection, resource management and development. The zones are as follows: 1) Prime Protection, 2) Critical Wildlife, 3) Special Use, 4) General Recreation, 5) Multiple Use, 6) Agriculture, 7) Industrial and 8) Facility. Existing zones applied to the corridor are Prime Protection, Critical Wildlife, Multiple Use, Industrial and Facility. The regional plan also contains a Table of Compatible Activities which categorizes representative resource use activities according to their compatibility with the intent of each land use zone. Zoning does not apply to privately owned land.

A.4 Fish and Wildlife Policy for Alberta

The Fish and Wildlife Policy for Alberta was approved by Cabinet in October 1982 and provides general direction for the management of wildlife and fisheries resources, and recreation and associated use of fish and wildlife resources. The most significant components of the policy are a provincial fish and wildlife outdoor recreation plan and an assessment of the status of fisheries and wildlife resources.

A.5 Alberta Forest Policy

Alberta's forests are managed to ensure a perpetual supply of benefits and products while maintaining a forest environment of high quality. Multiple use is an important principle in the management of forest lands in Alberta. It is the policy of the government to manage land under an integrated resource management concept which recognizes all uses. The major aspects of forest management in Alberta include forest protection, the protection of environmental values in conjunction with the management of the timber resource, the provision of outdoor recreation opportunities and the provision of grazing for domestic livestock.

A.6 Industrial and Science Strategy

The White Paper, Proposals for an Industrial and Science Strategy for Albertans, 1985 to 1990, published in 1984, details changes affecting the Alberta economy since 1971. It contains an overview of the Alberta economy, reviews objectives and strategies of the previous decade, and outlines various options and choices for the future.

The document proposes the following economic goals and objectives for Alberta, 1985-1990.

1. To build upon the significant resources and talents.
2. To sustain a climate in Alberta for private sector profits and investment.

3. To broaden and diversify the provincial economy.
4. To continue to upgrade the skills of our citizens.
5. To strive to balance the opportunities for growth throughout the various regions and centres of the province.

A.7 Position and Policy Statement on Tourism

The Position and Policy Statement on Tourism (1985) states, "it is the government's role to encourage a climate in which tourism can prosper and grow." Elements relative to this encouragement that may affect resource use planning include the following:

- assisting the private sector to upgrade/improve facilities and services;
- assisting other levels of government, such as municipalities, to develop and smooth the way for further development of related recreational and tourist opportunities;
- minimizing regulations affecting tourism services; and
- providing adequate protection for significant natural and cultural resources.

A.8 A System for Integrated Resource Planning in Alberta

Integrated resource planning (IRP) and integrated resource management (IRM) are the approaches the Government of Alberta takes to plan and manage public land and resources throughout the province. Local integrated resource plans are approved by the Minister of Forestry, Lands and Wildlife.

It is important that land use planning involves both those who are responsible and those who are affected by planning decisions. Decisions recommended by the planning team are reviewed by a number of provincial government committees at the director, assistant deputy minister and deputy minister levels. Improvement districts, planning commissions and the public are consulted throughout the process.

A.9 Plans Under the Planning Act

The Planning Act provides for the planning and regulation of land uses and the patterns of human settlement. Most private development, whether on freehold (privately owned) or public land, falls under the jurisdiction of the Act and plans and bylaws under it. The Crown is not bound by the Act. Instruments under the Planning Act include regional plans, general municipal plans, area structure plans, area redevelopment plans and land use bylaws. Plans and land use bylaws that apply to the area are the Calgary Regional Plan, the MD of Bighorn No. 8 General Municipal Plan, the South Corridor Area Structure Plan, MD of Bighorn land use bylaws and the Canmore General Municipal Plan and land use bylaws. Coordination between the provincial government and local authorities is essential to ensure that the intents and contents of instruments under the Planning Act and integrated resource plans (IRP's) are consistent with one another. While IRPs apply only to public land and resources and have no legal status, they do represent government policy for the majority of the planning area.

A.10 Alberta Recreation and Parks Policy Statement

As a department of the provincial government, Alberta Recreation and Parks has a mandate focused on improving the quality of life for Albertans through recreation development and heritage resource protection and appreciation. The mandate is established through legislation that defines major areas of responsibility and establishes broad operating parameters. This statement translates governing legislation into policy. It takes into consideration the current needs of Albertans, the changes occurring in today's society, and anticipated changes and needs. It also establishes policy directions for the provision and orderly development of departmental programs.

A.11 Historical Resources Act

The Historical Resources Act (1980) was designed to preserve the archaeological, historic and palaeontological resources of the province. It also sets out guidelines for the coordination of orderly development, the designation and preservation, the study and interpretation, and the promotion of appreciation of these resources.

The Act establishes the corporation of "The Alberta Historical Resources Foundation". The objectives of the foundation are to acquire and manage historic resources for the enjoyment and the benefit of the people of Alberta, to inform and interest the public in these sites, to increase the general knowledge about the history

and culture of Alberta, and to provide the people of Alberta with an opportunity to become directly involved in programs of the foundation.

GLOSSARY

Access Management Plan

A plan to manage off-highway vehicle access in the planning area with participation from concerned government agencies, local authorities and the public. The plan will consist of a network of selected routes and trails for vehicle use. The access management plan will address such items as types of vehicles, seasonal use of routes and trails, and limits to motorized recreational access in the area.

Animal Unit Month (AUM)

Measure of forage or feed required to maintain one (AUM) animal unit (a mature cow of 455 kg [1000 lbs]/or equivalent) for 30 days (Resource Conservation Glossary, Soil Conservation Society of America, 1976).

Archaeological Resource

"...a work of man that (i) is primarily of value for its prehistoric, historic, cultural or scientific significance, and (ii) is or was buried or partially buried in land in Alberta or submerged beneath the surface of any watercourse or permanent body of water in Alberta" and includes the works of man or classes of works of man designated by regulations as archaeological resources. (Historic Resources Act, Revised Statute of Alberta [henceforth abbreviated RSA] 1978, H-8).

Buffers

Areas of land where the vegetation cover is retained in order to provide a shield for high-value fish and wildlife habitat in one area against the impacts of development nearby. Buffers cushion the effects of development.

Camping

The following levels of camping can be provided by either the private or public sectors.

Auto Access

A formally designated camping facility that is accessible to normal vehicles from designated highways or improved roads.

Primitive

An undesignated camping area accessible only by non-motorized means.

Serviced

A major designated camping facility that is directly accessible by designated road or improved road and that provides significant services such as electricity and pressurized water systems.

Commercial Recreational Development

All activities and infrastructure associated with the development of facilities for the use of the general public, including fixed-roof recreation accommodation, such as hunting, fishing, skiing and backcountry lodges; hotels, motels, apartments, townhouses and cottages; and commercial recreational activities involving facilities such as ski hills and golf courses, whether owned and/or operated by the private or public sector.

Critical Habitat

Habitat crucial to the size, distribution or stability of a wildlife or fish population. Loss of such habitat would result in a drastic decline or extirpation of a population.

Disposition

Dispositions may be of a permanent nature-as through the sale of land, or temporary, when rights to particular lands or resources, either surface or subsurface are granted for a finite period of time. The most common forms of disposition are by sale, lease, licence or permit.

Ecological Resources

In the context of this plan "E.R." refers to defined program areas managed by the Alberta government. In particular this relates to the Ecological Resources & Natural Areas programs. In the general sense, ecological resources and associated ecological processes not addressed in these program areas are covered wherever appropriate throughout this document.

Ecoregion

An ecological system found on a given area of land refers to an ecosystem which characterizes a large geographical area and is intended to be a broad level of generalization for classification of

landscapes "an area characterized by a distinctive regional climate as expressed by vegetation".

Environmental Values

Value held by society toward any part or quality of the biological or natural physical environment perceived as meriting protection, preservation or retention.

Historical Resource

Any work of nature or of man that is primarily of value for its palaeotological, archeological, prehistoric, historic, cultural, natural, scientific or aesthetic interest (Historical Resource Act, RSA 1979, H-8).

Historic Site

"...any site which includes or is comprised of an historical resource of immovable nature or which cannot be disassociated from its context without destroying some or all of its value as a historical resource and includes a prehistoric, historic or natural site or structure" (Historic Resources Act, RSA 1979, H-8).

Hunting

The stalking of any wild animal for recreational and management purposes or as a source of food.

Important Habitat

Habitat not as essential to a wildlife or fish population as critical habitat, but still of some particular significance - either because it supports a notably higher population than surrounding lands or because it has a high seasonal value.

Important Wildlife Habitat

Habitat areas that area critical to a significant number of individuals of a species during at least part of the year. This may mean, for wild ungulates, wintering areas; for upland game birds, dancing grounds; for waterfowl production (nesting) and staging areas.

Industrial Development

All activities and infrastructure associated with the development of an industrial base to accommodate and service the extraction, removal and processing of non-renewable resources.

Integrated Resource Planning

A cooperative and comprehensive approach to decision-making on resource uses.

Integrated resource planning encourages everyone concerned to help decide the best use and management of public lands and resources. Planning identifies opportunities for resource use and resolves conflicts -- information is collected and analyzed, several options for resource use are developed and a choice is made. This choice directs resource management in the planning area. Integrated resource planning is one part of integrated resource management.

Natural Areas

Are parcels of land set aside for conservation purposes, primarily the White Area of Alberta. the designation and protection of such areas is consistent with similar programs throughout the world. Recreational Natural Areas are for outdoor recreational purposes, especially non-mechanized forms such as canoeing, snowshoeing, hiking and nature photography. Administration of Alberta's Natural Areas system is the responsibility of the Public Lands Division assisted by the interdepartmental natural areas committee.

Off-Highway Vehicle (OHV)

Motorized vehicle used for cross-country travel on land, water or snow, including four-wheel drive vehicles, two-wheel drive vehicles, ATCs, ATVs, motorcycles, track vehicles and snow vehicles. Off-highway vehicles do not include helicopters, motorboats, airplanes or mountain bikes.

Patent Land

Privately owned land.

Public Land

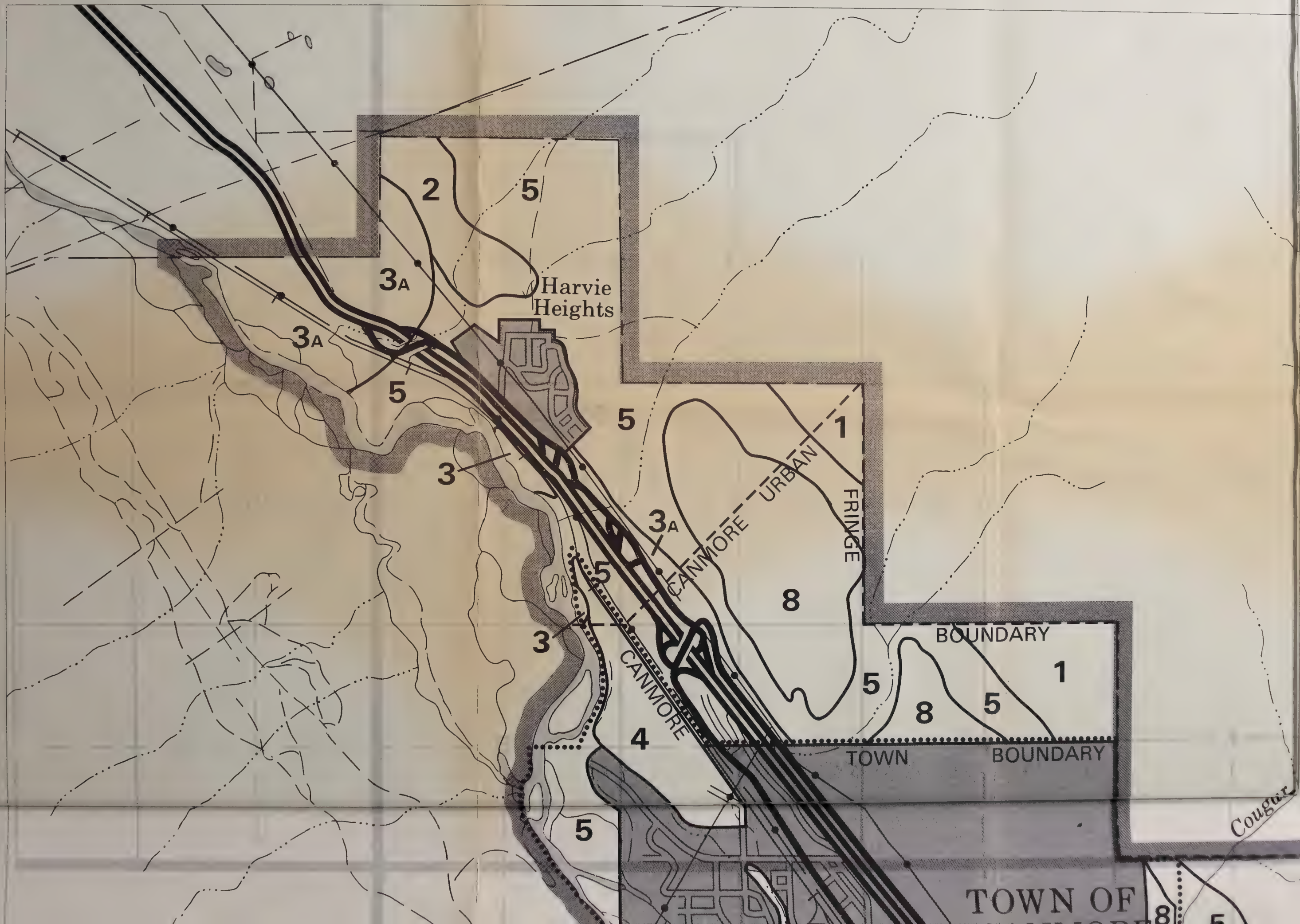
Land which is under the administration of the Minister of Forestry, Lands and Wildlife. Title to the beds and shores of all rivers, streams, watercourses, lakes and other bodies of water is declared to be vested in the Crown in right of Alberta and under the administration of the Minister of Forestry, Lands and Wildlife (Public Lands Act, RSA 1980, P-30) unless the title specifies otherwise.

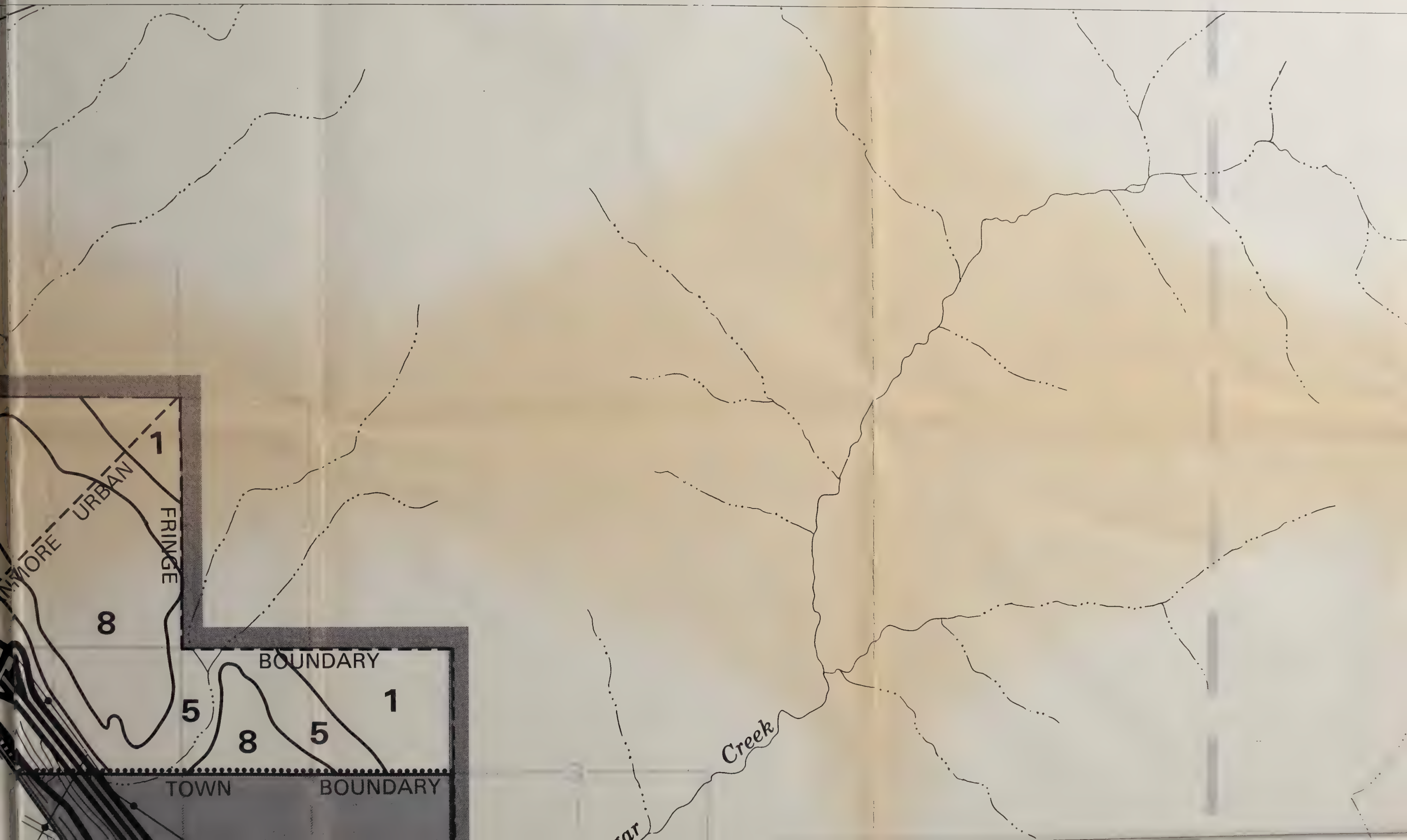
Residential Subdivisions	All activities and infrastructure associated with permanent housing subdivisions for residents.
Sterilization	The rendering of a resource inaccessible or undevelopable through the restriction of surface access to that resource or the fragmentation of that resource.
Tourism	The action and activities of people taking trips to places outside their home communities for any purpose except daily commuting to and from work.
Tourism Facility	A man-made development whose purpose is to offer or enhance a particular service or recreation activity to the tourist.

R.11

R.10

Tp.
25







GROTTO
MOUNTAIN

Exshaw

Creek

Jura

Creek



MOUNT
LAURIE

Jura

Creek

LODER
PEAK

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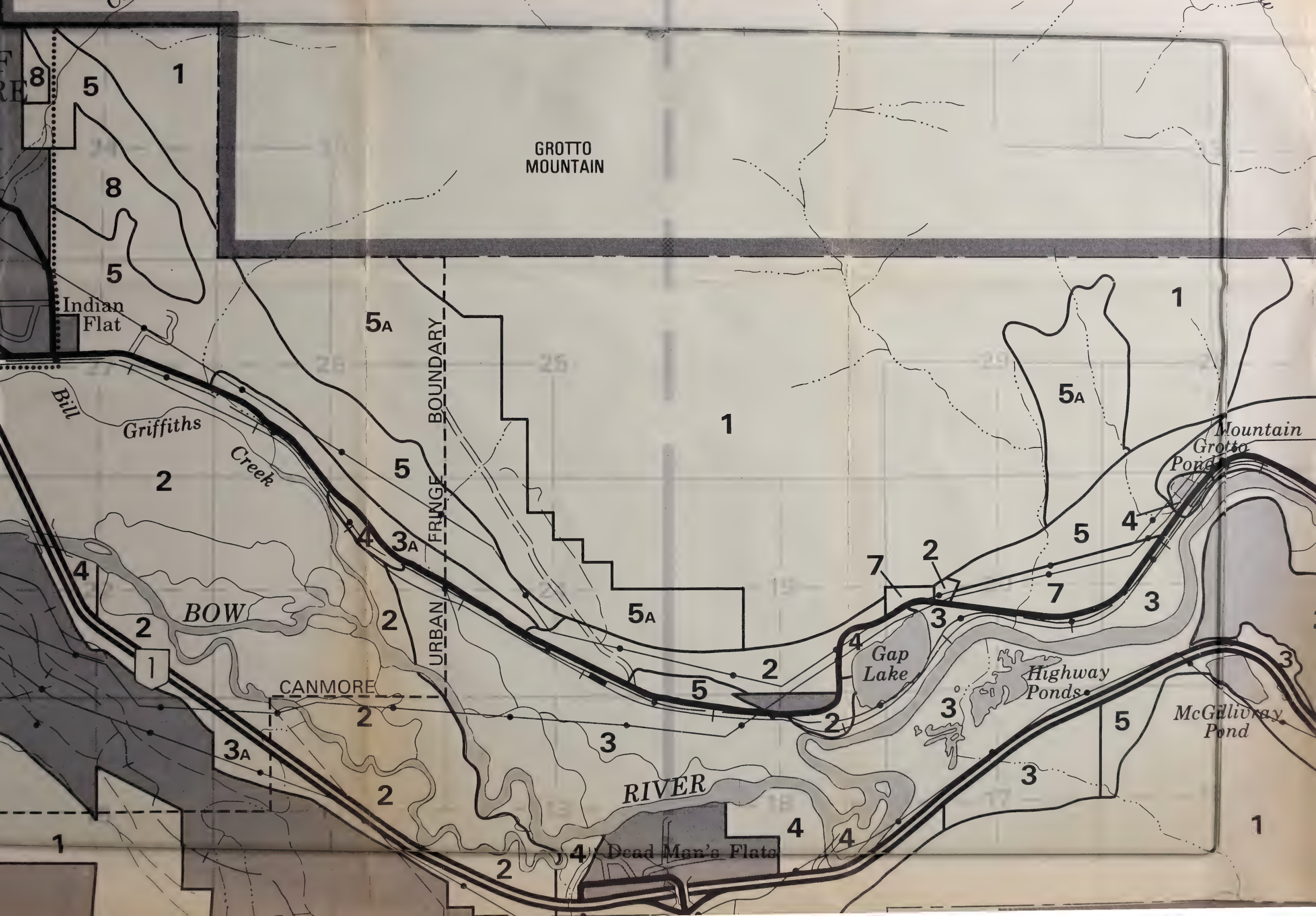
Kananaskis
Falls

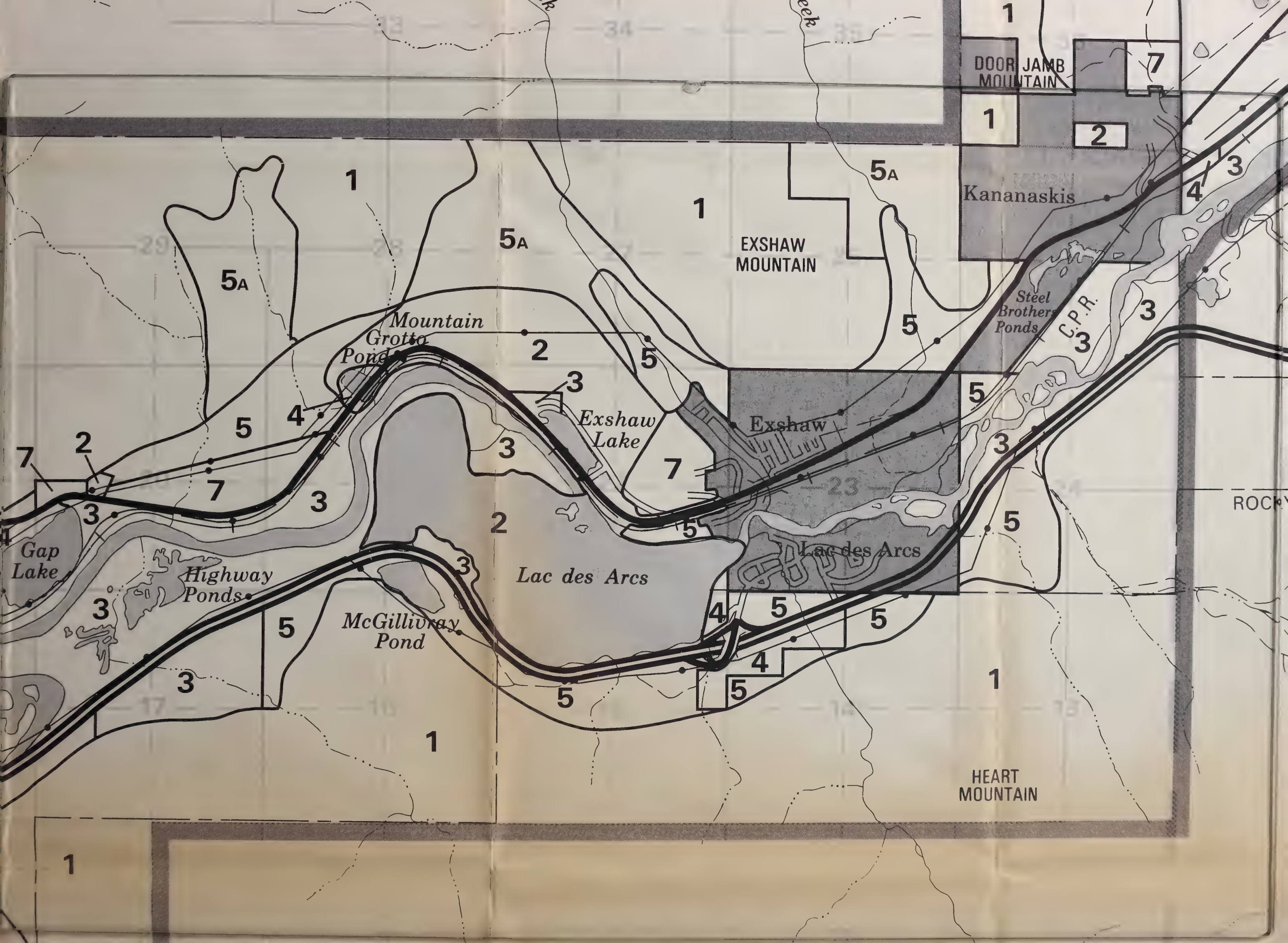
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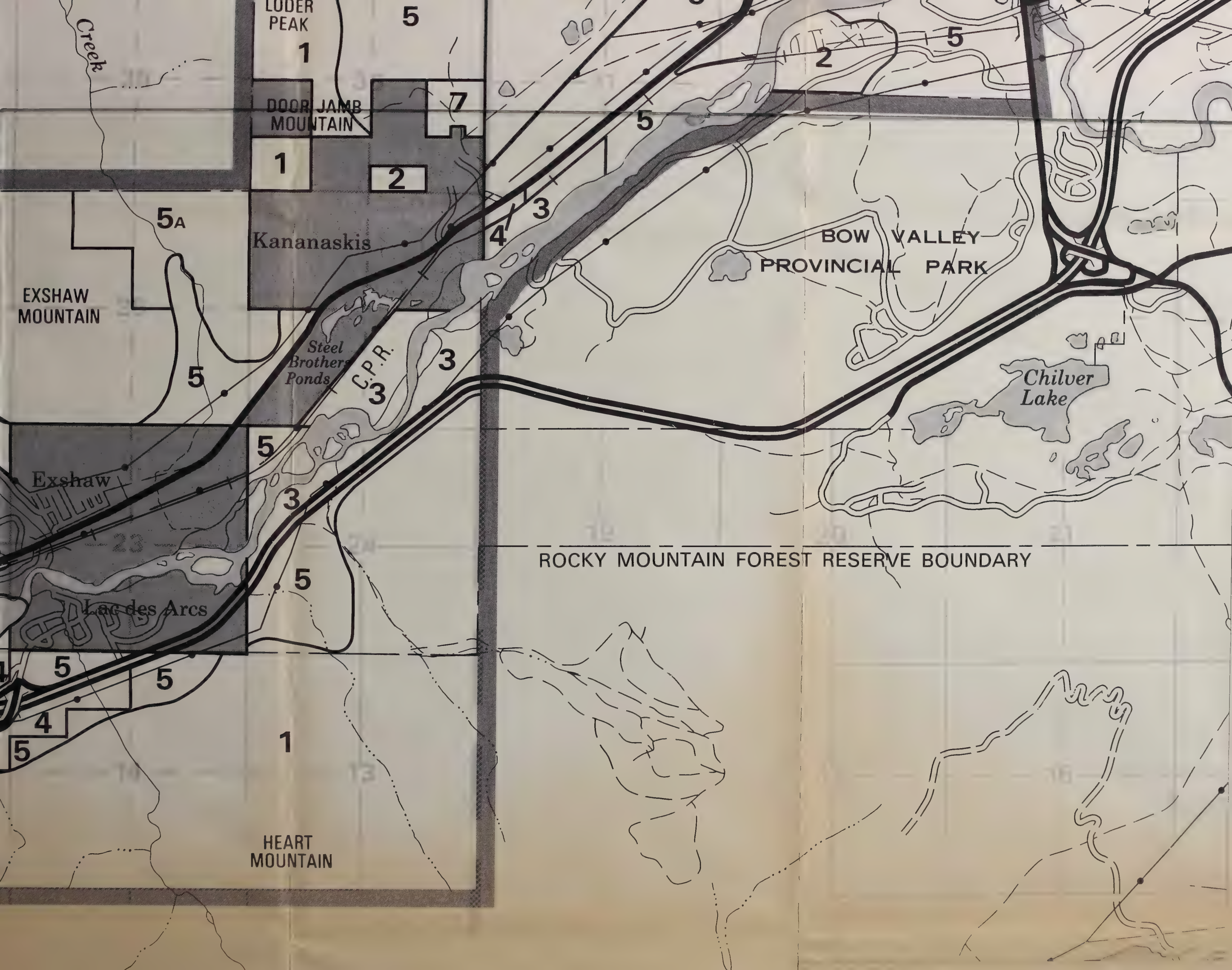
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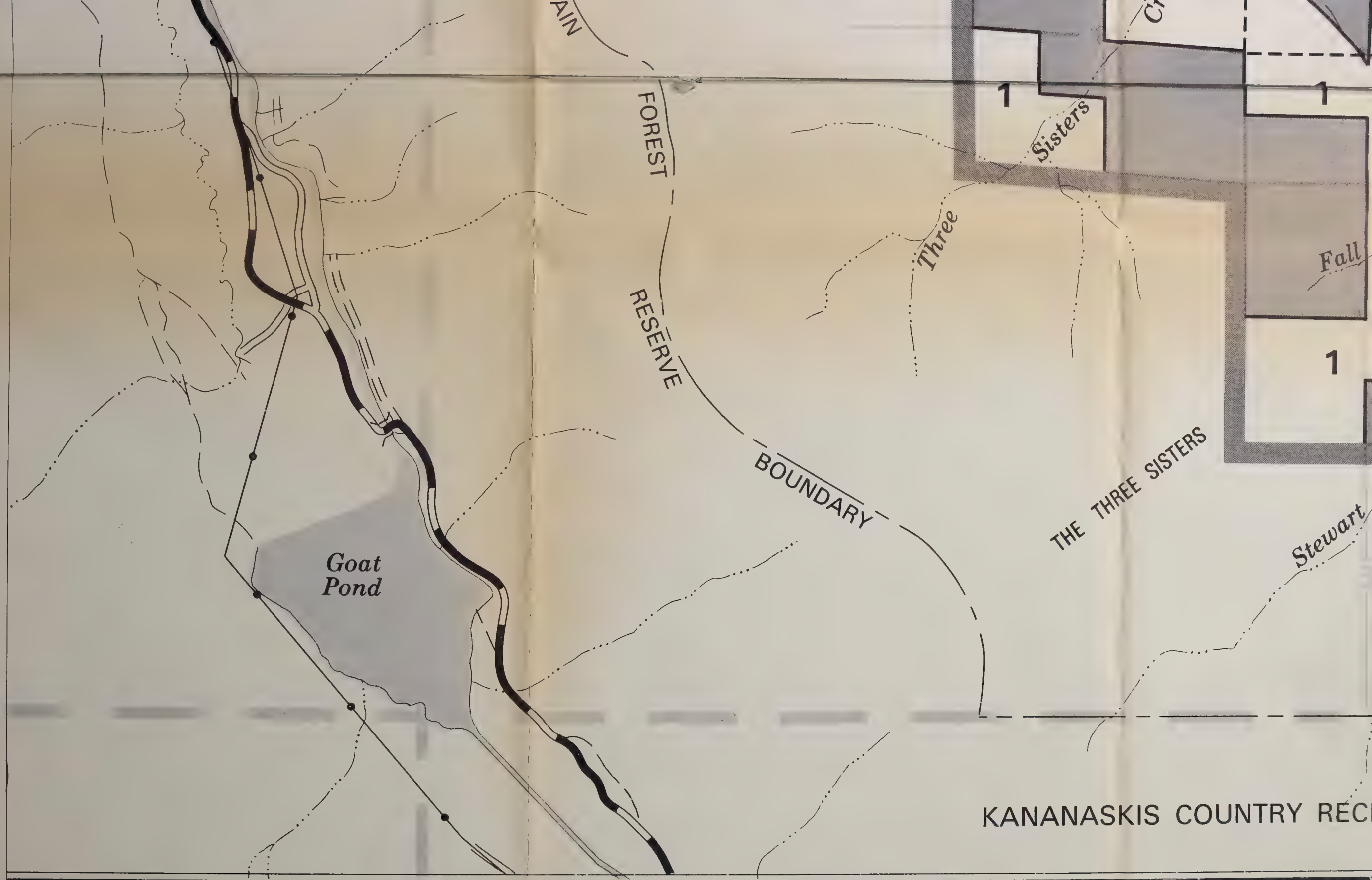
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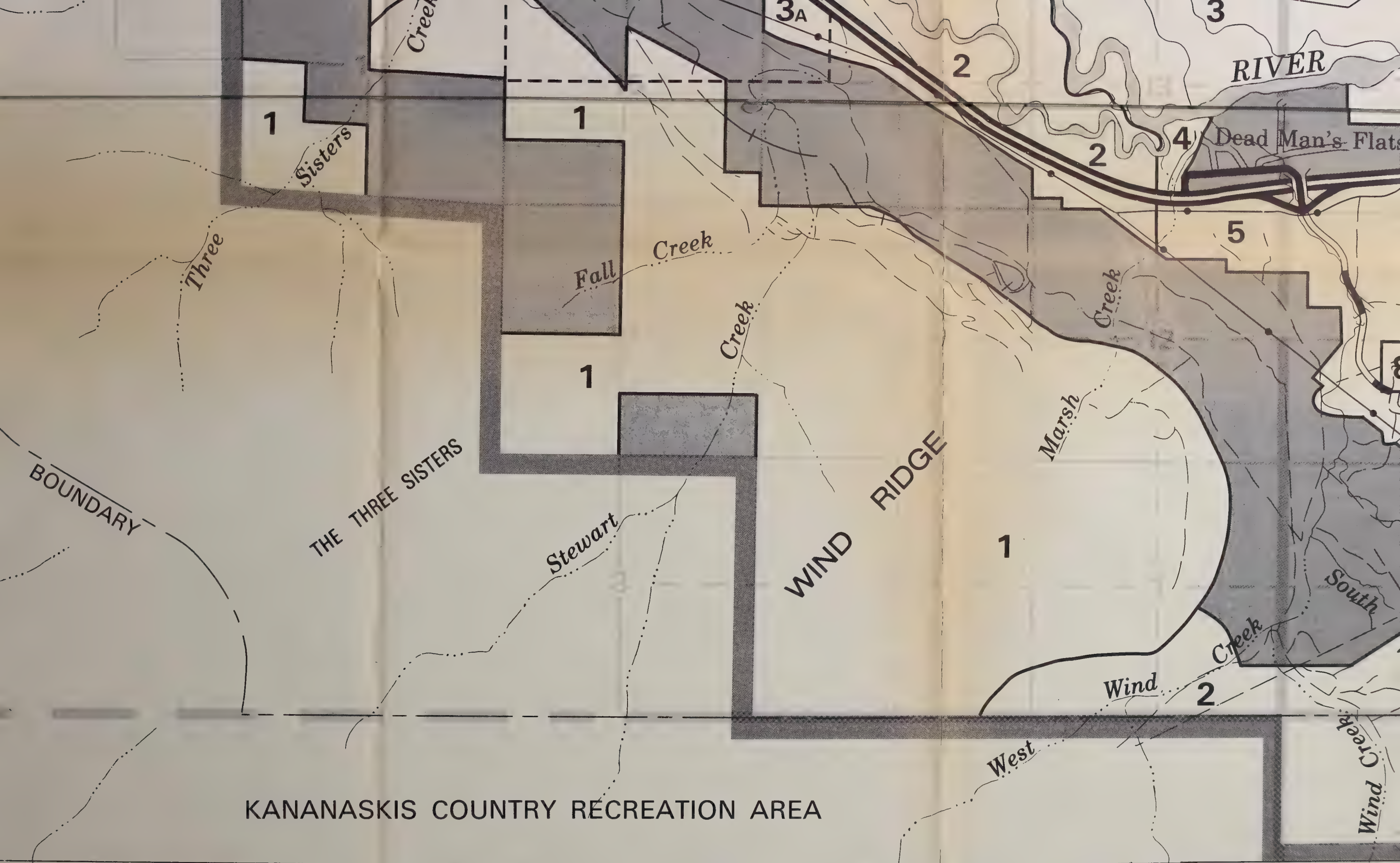




25'

20'

KANANASKIS COUNTRY REC

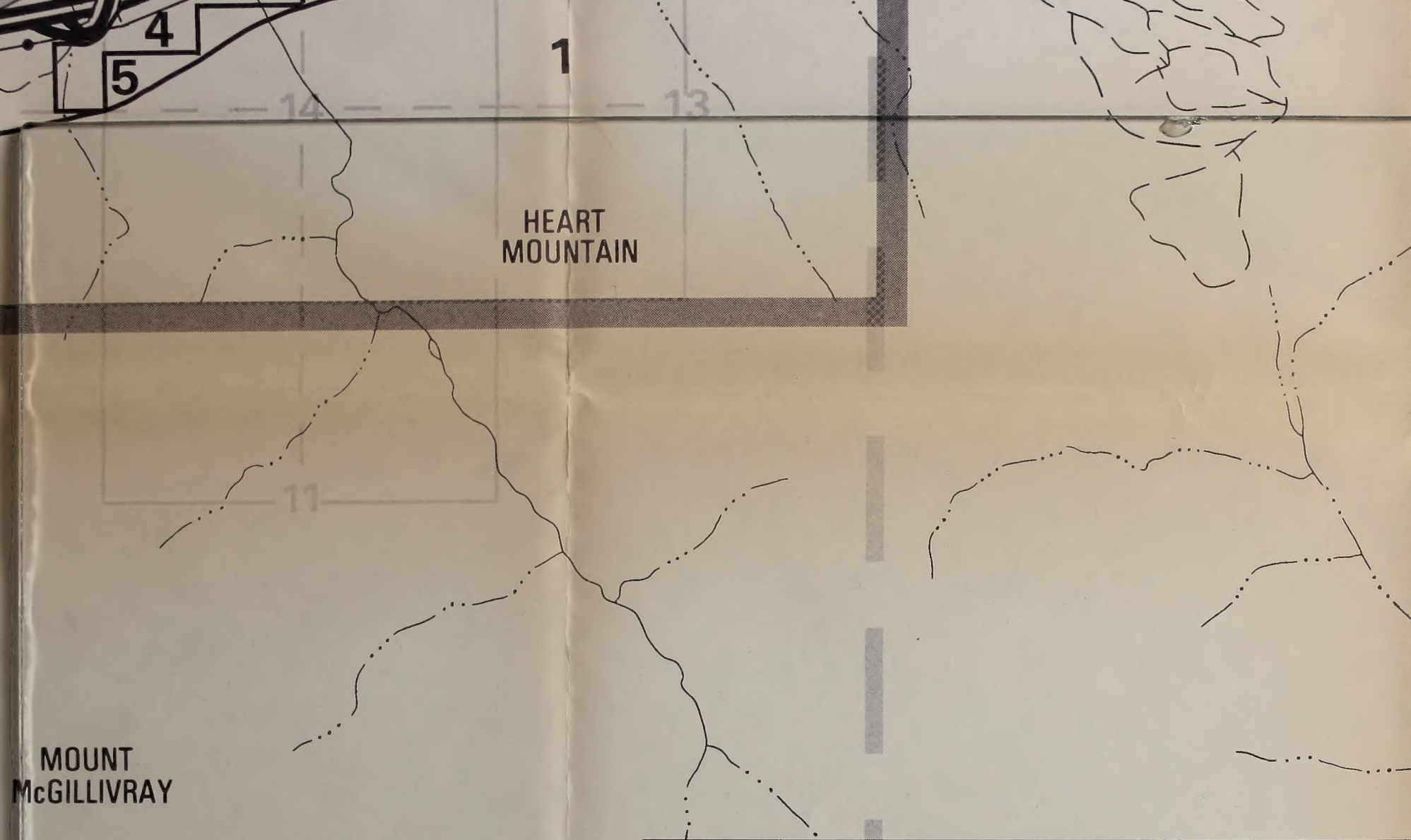


KANANASKIS COUNTRY RECREATION AREA

20'

15'





HEART MOUNTAIN

MOUNT
McGILLIVRAY

REFINED EASTERN SLOPES ZONING

- 1 Prime Protection
- 2 Critical Wildlife
- 3 Special Use
- 3A Buffer
- 4 General Recreation
- 5 Multiple Use
- 5A Mineral Expansion
- 7 Industrial
- 8 Facility

April 30, 1990

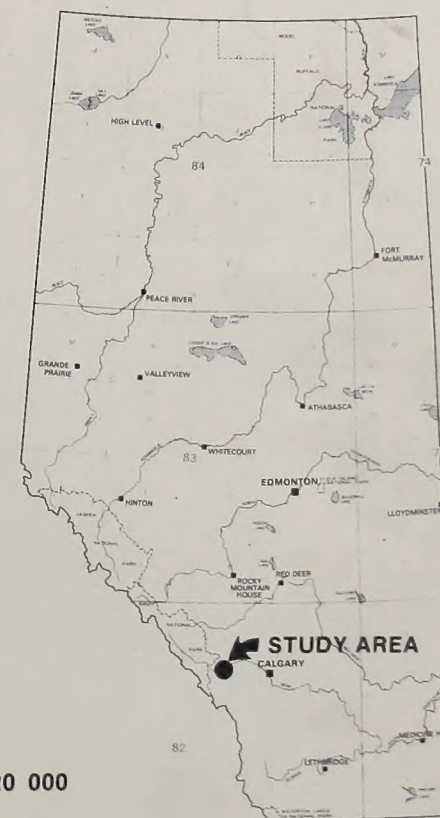
BOW CORRIDOR LOCAL INTEGRATED RESOURCE PLAN

PROVINCIAL LOCATION KEY MAP

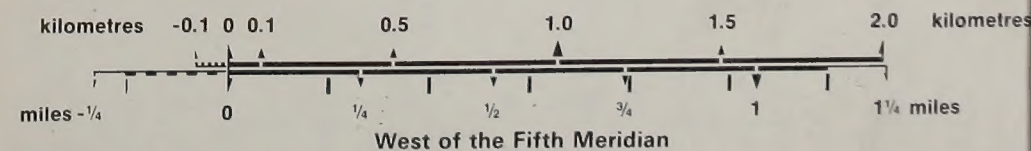
Planning Area Boundary



Patent Land



SCALE- 1 : 20 000



Alberta
FORESTRY, LANDS AND WILDLIFE
Land Information Services Division

NLC - BNC



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